THE

ADDRESS IN SURGERY

Delivered before the British Medical Association at Manchester, on Thursday, August 9, 1877,

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MR. PRESIDENT AND GENTLEMEN,—When I received from the President of the Council of this great Association the unanimous request of the Committee of Council that I would deliver this Address, and was further assured that I was thus invited at the suggestion of a deputation from Manchester, I felt that any hesitation on my part might appear ungrateful, or as if I did not appreciate a great honour. So, without wasting your time by apologies, and simply thanking you for the exceeding kindness of your greeting to-day, I will ask you to consider with me how, as an Association, how in each of our branches, how, individually as well as collectively, every one of us may assist in the advancement of the

Surgery of the Future:

how the art and science of the present, which we have received from our forefathers and our teachers, and as far as we could have improved, may be so handed down that our followers, taught by our success, warned by our failures, knowing where our knowledge is defective, our methods faulty, may so work and so observe that in each succeeding year surgery may become more perfect as an art, more exact as a science, and more honourable as a profession.

It is almost impossible to estimate the state of surgery of the present day, still more so to look forward to what surgery may become, without some review of its condition long ago and of the progress made during the existence of this Association.

It is one of the remarkable coincidences of English history that the reigns, nearly equal in duration, of the two queens, Elizabeth and Victoria, have been the two ages most distinguished by the rapidity and extent of national development. Elizabeth mounted the throne after the death of her sister Mary, accelerated by disappointment at the termination of supposed pregnancy in dropsy, which was no doubt ovarian, and treated according to ignorant routine by successive bleedings. Treated with the knowledge now at command, the destinies of England might have been strangely altered. Elizabeth reigned forty-five years, and in her time, surgery, though already chartered as a profession, was neither an art nor a science. For the most part it was carried on as a trade, after the fashion of the country farriers of our day. Indeed, it was unanimously agreed by the Queen's Commissioners that it was unlawful for surgeons to administer internal remedies even in cases of wounds. "Bokes of Chirurgerie' were collections of sayings and nostrums. Life was rude, living was unwholesome, and death came early. The people perished by scurvy and sweating sickness; they were killed or scarred by small-pox; their blood was poor, and the barbers bled them. Fighting-men began to suffer from gunshot wounds, and their blood, gushing from arteries cut in hacking amputations, was staunched by "choke-bands," by boiling pitch, or by hot irons. The first impulse towards improvement came from Ambrose Paré. But men long looked suspiciously on his new practice of tying bloodvessels in amputations. And so, as an art, surgery—an exception to the general progress—stood almost still, even long after Harvey's great discovery, and scarcely any important advance, beyond such manual dexterity as that of Cheselden, was made until the time of Hunter. His noble work is thus epigrammatically acknowledged by the philosophical Malgaigne:—"Surgery, which in the Middle Ages scarcely ranked above a common trade, and grew to be honoured as an art in the hands of Paré and Petit, was raised by Hunter to the dignity of a science." What it has become since, and is now, we may perhaps best see by rapidly tracing its development parallel with the history of our Association, which may almost be said to be the offspring of the age of Victoria.

Before this Association was founded the daily practice of surgery was guided by a knowledge of what Hunter and Scarpa had done as to the ligature of arterial trunks. Resection of joints had been frequently though not commonly performed. Bell's teachings of the different nerve-functions had been universally accepted. Auscultation and percussion had been gradually perfecting diagnosis among those who were then about entering into practice. The vegetable alkaloids were beginning to take the place of the coarser materials previously used as remedies. Almost coincidently with the formation of this Society, in 1832, there began to be spoken about vaguely, and as curiosities, things which are now so universally practised that probably very few of those who listen to me recollect how very recently they have been accepted as part and parcel of surgical practice. I am not one of the oldest here, but I can well remember when lithotrity was a novelty, when the subcutaneous section of tendons was absolutely new, when orthopædic surgery was unknown, when the torsion of arteries was spoken of as a barely possible substitute for the ligature, when the radical cure of hernia was scoffed at as a French delusion, when the treatment of aneurism by compression had hardly even entered into the professional imagination, and the study of uterine pathology was only just opened up by the introduction of the speculum as a means of investigating the condition of the mouth and neck of the uterus.

In 1832, when it was resolved to form this Association, and at the succeeding meetings in 1833 and 1834, all these things were new and almost untried. In 1835, at Oxford, Costello publicly demonstrated lithotrity as a novelty before the assembled members, and I think we may fairly date the establishment of that operation, now so carefully and generally practised by so many of our associates, from that meeting.

In 1836 the Association met for the first time at Manchester. Crosse, of Norwich, was the first surgeon to give a retrospective address. In it he mentions as a recent discovery that of the trichina spiralis by Owen. He makes the first notice of the chloride of zinc in cancer, and doubtingly hopes that the use of the speculum even in this country may become general. He states that in this year there is the first known example in Great Britain in which both mother and child were saved by the Cæsarean operation, done by Knowles, of Birmingham.

And here for a moment let me ask you to recall to mind the man who forty years ago was speaking to the Association as I now speak, not with his power, but to an audience enormously increased in numbers and influence. Crosse lived till 1850. I did not know him personally, but friends of mine who did speak of him as a man upright in character, earnest, natural, joyous, communicative, a fellow-worker with his pupils, of intense and untiring energy, priding himself upon gaining a most exact information of the progress of surgery, self-reliant, rapid in judgment, ready in action, calm and dextrous as an operator, yet with a strong conservative tendency as regards the knife, and most scrupulous in his attention to even the minutest details in the management of his cases. A clear and accurate writer, an industrious contributor to periodical literature, the good he did lives after him, especially in the impetus which he gave to the study of the direction, sanitary condition, and improvement of hospitals.

After Crosse, the next retrospective surgical address was by James, of Exeter, in 1839. In this he alludes, as a great novelty, to the fact that a member of our Association, Jeaffreson, of Framlingham, had successfully extirpated an ovarian cyst through a small incision; and also mentions that King, of Saxmundham, had repeated the operation on another patient with an equally good result. In 1840, at Southampton, Dodd, of Chichester, in the address on surgery, gives an account of the recent experience of Dieffenbach and Liston in operating for strabismus as something new, and reports that lithotrity does not seem to make any great advance in the favour of the profession in this country; and in 1843, at Leeds, William Hey said that "the rage for dividing muscles and tendons is somewhat moderated." In his own words, "The past year has been signalised by the successful performance of several operations for the removal of ovarian tumours from the abdomen.

Dr. Clay, of Manchester, has recorded five cases, of which three were successful, and Mr. Walne, of London, one successful case." The William Hey who gave this Address in Surgery was the third in the line of the great family, the head of whom was president of the meeting. Owing to his advanced age the general address was read for him, and he died in the course of the following year. As a pupil of the Leeds Infirmary, forty years ago, I well remember the careful teaching and painstaking kindness of William Hey, jun., as he was then called. The name of Hey stood almost as high in Yorkshire as those of Abernethy and Cooper in London, and one of the family, Richard, grandson of the president, and for many years surgeon to the York County Hospital, almost simultaneously with Abernethy tied with success the common iliac artery for external iliac aneurism. The surgeoncy of the Leeds Infirmary has been held in the same name for 106 years, and descendants of the third and fourth generation are members of the present staff. Worthy representatives of the great family to which they belong, they still maintain the high reputation of the surgery of the North. Another well-known member of a noted family of Yorkshire surgeons, Thomas Pridgin Teale, read the address at Sheffield in 1845. He alludes to the treatment of aneurism by compression, as indicating a great advance in the science of surgery. He notices Key's modification of herniotomy by dividing the stricture outside the sac as gradually assuming the positition in the estimation of the profession to which it is entitled.

We now come to what will ever be looked on in future time as the commencement of a new era in surgery. In 1847, at Derby, Walshe, of Worcester, introduces for the first time the subject of anæsthesia, Crosse remarking that the inhalation of sulphuric ether was a subject of deep importance and great novelty. Your hourly familiarity with the use of anæsthetics of various kinds will make it difficult for you to realise the fact that it is only thirty years since Crosse spoke before this Association of the inhalation of ether chiefly as a means of disarming *a patient of his antagonism*. The first considerable essay on anæsthesia, and anæsthetic substances generally, was published in our Transactions in the following year by Nunneley of Leeds. That was in 1848; and in the same year, at Bath, chloroform was for the first time publicly mentioned before this Association. In a review of the history of surgery in the reigns of Elizabeth and Victoria, there is no brighter page than that which records the discovery of anæsthetics, and not one in which the contrast is more strikingly in favour of the practice of our day. Anæsthesia in midwifery met with more opposition than in surgery, and there must be many here who know well how much was done by the personal example of our own Queen towards allaying groundless fears and disarming irrational prejudice. National vanity may be more flattered by some public deeds of royal devotion; but I cannot call to mind a stronger proof of moral courage, of wiser consideration for the interests of her subjects, nor any act which, in the personal relations of the Queen to her people, demands more respectful recognition from the profession, or has a stronger claim on national gratitude.

In 1854 the Association met for the second time at Manchester—its twenty-second anniversary meeting. Instead of 7000 members, as now, there were but little more than 2000. Instead of the large attendance so hospitably welcomed this week, only 202 members attended.

The surgical address in 1856 at Birmingham, by Langston Parker, should be remembered as a judicial summary of what was known of the treatment of cancer by caustics.

In 1857, at Nottingham, your Manchester Southam read the Address in Surgery, limiting himself to the subject of cancer and its treatment. Many of you knew Southam better than I did; but sitting with him in the Council of the College of Surgeons, and joining in the friendly gatherings which follow some of those meetings, I learnt to appreciate his sterling straightforward honesty, his kind, genial character, and his ardent love for our profession and its work. And I can fully endorse all that was said of him by Sir James Paget in his obituary notice of the deceased Fellows of the Medico-Chirurgical Society, and acknowledge with extreme interest all that Sir James said as to Southam's services in the early days of ovariotomy in England.

Passing on to the Edinburgh meeting in 1858, it was then that we heard for the first time of local anæsthesia. Here also the subcutaneous injection of narcotics was brought under notice by Alexander Wood, who stated that even then the practice, although but lately introduced, was becoming general in Edinburgh; and recent improvements in the treatment of vesico-vaginal fistula were described to the Association by Mr. Baker Brown. Sims's speculum and wire sutures were then unfamiliar; though they are now acknowledged to rank among the chief of the improvements for which we are indebted to our American brethren. Baker Brown was one of the first to adopt, and afterwards to modify, the proceedings of Sims. Brown had previously done good service by demonstrating the mode of curing old ruptures of the perineum, and his example undoubtedly assisted in the improvement of this department of surgery. As an operator he was almost perfect, and he was one of the earliest London surgeons to practise ovariotomy. Many years afterwards he extended the use of the cautery-clamp (employed by Clay, of Birmingham, to divide adhesions and stop bleeding from omental vessels) as a mode of separating and securing the pedicle. May I be excused if I venture to remind you that in 1861, at the Canterbury meeting, I brought before the Association a paper on the treatment of ovarian cysts, which others have said had some influence in directing professional attention to an improved method of performing ovariotomy, and to the selection of cases for the operation, and other modes of treatment?

The first meeting of the Association in London, 1862, its 30th anniversary, was rendered memorial by the surgical address of Paget. He spoke of the management of patients after surgical operations, and urged upon us all the study of the large group of diseases classed under the name of pyæmia, their origin, multiform nature, and mode of prevention. Read the lecture; it is a surgical classic, an eloquent but despairing cry from a great surgeon who feels the "deep regrets, the bitter disappointments from which we might be saved if there were less risk" after many of the operations done to save life, and who shudders at the "tolerated barbarisms of practice," only justified by the belief that the risk of "a cutting operation is so great that there is nothing too bad to be substituted for it," and who can find but one thing that he can call remedial for the whole disease pyæmia, and that is, a profuse supply of fresh air—"wind blowing all about the rooms." In his concluding remarks the orator impressed us all by his appeal to lessen the number of preventable deaths after great operations, insisting that the mortality "will be reduced if the members of this Association will decide that it shall be, and will act vigorously on their decision."

Deeply sympathising with this desire to remove all possible sources of excessive mortality after surgical operations, I brought the subject again before the Association at the Cambridge meeting in 1864. Feeling that something more than an abundant supply of fresh air was wanted, and knowing that with the air might enter unsuspected sources of danger to the patient through his wound, I directed attention to the researches of Pasteur upon the presence of infectious germs or organisms in the atmosphere, and to the demonstrations of Charcot and others of the impure particles in hospital wards, and showed how the development of low forms of animal and vegetable life was checked by the use of sulphur and the sulphites, as taught by Polli.

The Leamington meeting, in 1865, was distinguished by the address of Syme, in which he reviews the progress of surgery during the previous forty years, alluding among many other matters of interest to the *new position* which the operations of Thomas Keith, and my own, had given to an operation previously regarded as remarkable for uncertainty of prognosis, difficulty of diagnosis, and danger of execution. Coming from such a man at that time, and on such an occasion, this judgment must have had considerable weight on professional opinion; and more than one writer has expressed his belief that by actually performing the operation on two patients in the following year, before the assembled Association at Chester, showing that it could be done, and how it was done, to a large number of practical surgeons, another step was gained in securing a more general admission of ovariotomy among the legitimate proceedings of surgery.

By this time the numbers of the members of the Associa-

tion had greatly increased, the meetings were more numerously attended, and that at Dublin, in 1867, was reported as the largest known by several hundreds. There, as at Oxford in 1868, distinguished foreigners arrived among the visitors, surgical papers became more abundant, and the application of general science to surgery is more noticeable. Electricity, optics, acoustics, chemistry had all contributed to the perfection of instruments facilitating more exact diagnosis. The ophthalmoscope, the otoscope, the laryngoscope, and the endoscope all appear as familiar aids for exploration. The thermometer was in almost universal use, the sphygmograph still confined to the select few; the splanchnoscope or diaphanoscope then, as now, a curiosity. Microscopic parasites, animal and vegetable, were recognised in great number, and were divided into orders, genera, and species. The infectious influence of hospital atmosphere was being more feared and more carefully guarded against, drainage was coming more into practice in the treatment of wounds, and as a preventive of local inflammation and general fever after surgical operations. At the Leeds meeting, in 1869, the antiseptic treatment was brought before the Association by Nunneley, who ridiculed it as a professional error, and said that he believed "if stumps heal under such treatment they do so in spite of it." Remember this was only eight years ago. Two years later, at Plymouth, in 1871, the surgical address was given by Lister mainly on this one subject, and exclusively as the result of his own observations and experience, but with the effect of giving an immediate stimulus to the spread of the antiseptic system at home and abroad.

The meetings in 1872, at Birmingham, and in 1873, in London, with the attendance largely increased, the work methodically arranged in sections, the papers more varied, the discussions more animated, the presence of the Prime Minister at the dinner, the more complete amalgamation of the metropolitan and the provincial members, had both their share in assisting in the advancement of the social position of the profession and the progress of surgery. At Norwich, in 1874, Mr. Cadge noted as recent improvements Esmarch's bloodless operations and the use of Dittel's elastic ligature. The germ theory of putrefaction and antiseptic surgery he looked at as subjects still waiting for solution.

At Edinburgh, in 1875, Lister's demonstrations and Spence's criticisms fairly brought all sides of the question under intelligent observation. Lister showed before large bodies of skilled and discriminating witnesses exactly what he did and how he did it, and with what results; whilst Spence, before the same assemblies, sharply criticised the work of his colleagues, and contended that as much could be done under similar conditions without antiseptic precautions. It is impossible to conceive a more satisfactory mode of completely discussing the principles of a new system of treatment than such a public trial before able and impartial judges, with the advocacy of an earnest, enthusiastic, scientific investigator and worker on one hand, and on the other with the opposition of a cool and sceptical rival minutely criticising the accuracy of every assertion and the logical value of each inference. And here, in passing, let me beg you not to forget one chief, if not the chief, advantage of these meetings. The most animated controversy may be carried on in the warmest manner, the most opposite opinions may be entertained and supported, the keenest rivalry for the honours awaiting him who first seizes upon a new truth may be exercised in the arena of discussion without the slightest personal animosity, but rather with an increase of the feeling of good-fellowship and mutual respect brought about at the social gatherings, where men are either thrown together for the first time or ripen old acquaintance.

It is impossible to review

The Surgery of the Present Day

without observing the result upon it of the work of Simpson, Syme, and Fergusson, whose deaths followed each other in such rapid succession.

The association of Simpson's name with chloroform and the lessening of hospital mortality, with the attempt to "stamp out" infectious disease, with acupressure, with the uterine sound, and generally with the recently improved diagnosis and treatment of the diseases of women, need only be mentioned to be felt and acknowledged.

Syme's influence was rather that of a great teacher of clinical surgery, sending forth every year a large addition to the number of our profession, well grounded in the well-established principles of practice.

Fergusson, in the words of Paget, "the greatest master of the art, the greatest practical surgeon of our time," was the founder of the school which he, twenty-five years ago, first characterised by the happy term of conservative surgery—a term since become so familiar and so suggestive to the operating surgeon of care not to sacrifice limbs or parts which can possibly be saved, and never to risk life unnecessarily, that it has gradually developed a race of modern surgeons who, not content with performing operations in the best possible manner, pride themselves far more on the number of lives and limbs that they have preserved. Fergusson said "No one can more thoroughly appreciate a well-performed amputation than I do, but I certainly appreciate more highly the operation which sets aside the necessity for that mutilation." Teaching all this as he did by example and precept for many years to large classes of young men, and to their seniors by his published writings and by lectures at the College of Surgeons, he has in a marked degree modified the character of the surgery of our age. The improvements which he introduced in lithotrity and in the cure of cleft palate may be almost considered as typical of the school of modern conservative surgery, and will long be acknowledged as triumphs of British surgery in the reign of Victoria. Of the man himself, so lately presiding at our meetings, so kindly and friendly, the skilful surgeon, the beloved teacher, the wise and prudent counsellor, so lately lost to us, almost everyone here still retains a vivid recollection; and his death is mourned as a loss to the Association which he adorned, and by a large number of our members as that of a dear friend.

And here, before quitting the progress of surgery in connexion with the growth of the Association, let me ask if anyone can doubt that the art and science of surgery have not advanced as much since the Elizabethan age as any other art or any other science, great as those advances may have been.

And in considering how that advance, as recent as it has been rapid, may be carried further on, let me first draw your attention for a moment to the subject of

Anæsthesia and Anæsthetics.

In 1872 I made known my opinion that all the advantages of complete anæsthesia, with fewer drawbacks, could be obtained by the use of bichloride of methyline or chloromethyl than by any other known anæsthetic. That was the result of an experience of five years, and of 350 serious operations. The experience of the five succeeding years up to the present time, with more than 600 additional cases of ovariotomy, and many other cases of surgical operations, has fully confirmed me in this belief. Given properly diluted with air, the vapour of chloromethyl has, in my experience of ten years with more than 1000 operations of a nature unusually severe as tests of an anæsthetic, proved to be without a single exception applicable to every patient, perfectly certain to produce complete anæsthesia, relieving the surgeon from all alarm or even anxiety; and its use has never been followed by any dangerous symptom which could be fairly attributed to it. I wish I could speak as confidently of the chemical composition of the fluid sold as bichloride of methyline as I can of its anæsthetic properties. But whatever may be its chemical composition, whether it is or is not chloroform mixed with some spirit or ether, or whether it really is bichloride of methyline, I am still content with the effects of the liquid sold under that name, when properly administered. The only deaths ever attributed to it were, I believe, rather due to asphyxia. No air was given with the methyline. By Junker's apparatus, air charged with methyline vapour is given—not the vapour itself—and, so employed, it has always been in my experience both efficient and safe. I am sorry that some of the analytical chemists whom I have asked to clear up the question of its composition have not done so. It ought to be done, it can be done, and it must be done. The Committee appointed in Edinburgh two years ago, reappointed last year in Sheffield, but which has never met until this morning, might very well undertake this task. Perhaps as the Committee is a very large one, and is made up of members from Aberdeen, from Edinburgh, from Dublin as well

as London, it is almost impossible for them to do what is required in the words of the resolution—namely, "to inquire into and report upon the use in surgery of various anæsthetic agents and mixtures of such agents, and to collect and summarise the evidence of British practitioners in surgery and medicine as to the relative advantages of chloroform, ether, nitrous oxide gas, and other agents, and to carry on suitable experimental investigations." It would appear to me far better to expend any sum devoted to this purpose by the Scientific Grants Committee—and this sum ought to be a sufficient one—so as to encourage one really competent investigator to do the work thoroughly well, bearing the full responsibility and taking the credit which is due to work well done. The valuable reports on the life history of contagium, on the electric currents of the brain, and on the biliary secretion of the dog—which have already appeared in the Journal, and others of equal importance waiting for publication—are quite sufficient encouragement for us to extend the practice of entrusting original investigations, to individuals, who should be as liberally remunerated as the funds of the Association will permit, rather than trusting to the uncertain or impossible conjoint action of honorary committees. Perhaps we are hardly aware how much the public expect from us in this matter. Deaths from chloroform are alarmingly frequent, yet no substitute for it has found universal or even general acceptance in this country; and I am not speaking too strongly if I say it is the duty of the Association at once, without any unnecessary delay, to satisfy the public that all that is possible is being done to discover the means by which anæsthesia, effectual now, may be rendered safe for the future.

It is more than twenty years since I brought Wutzer's operation for the

Radical Cure of Reducible Hernia

to the notice of English surgeons. Wutzer's practice, afterwards modified by Rothmund, and the much more important change introduced and so successfully practised by Mr. Wood, of drawing firmly together the hernial apertures, so as to establish again the valve-like action of the inguinal canal, have hardly had the effect of generalising any of these procedures. For reducible hernia a truss, for strangulated hernia operation, are still the rule. I believe the time is coming when most cases of reducible hernia, at any rate those not completely secured by a truss, will be radically secured by the surgeons, if not of this generation, certainly of the next. In many cases of inguinal hernia in young persons, Wood's operation under antiseptics will become more general. But we have reason to hope that we may obliterate the hernial sac, close its abdominal orifice, and strengthen the abdominal wall by the use of insulated needles connected with the positive pole of the galvanic battery, causing shrinking and occlusion of the sac, while the alternate use externally of galvanisation and faradisation may assist in restoring tone to the weakened muscles. This is by no means the least of the many applications which may probably be made hereafter of

Electricity as a Therapeutic Agent

in surgical treatment.

In 1848 I directed attention to the use of a weak continuous electric current in the treatment of ulcers. Dr. Golding Bird presented the results of my experience to the readers of his well-known work. Although the results were striking, Mr. Nunn is almost the only surgeon who seems to have made much use of the information. But recently a son of Dr. Golding Bird has published some very important additions to our knowledge of this subject, and has most advantageously treated scrofulous lymphatic glands by a painless electrolytic caustic. When chloride of zinc is employed as an arrow, or paste, or in any other way, the pain is very severe; but if formed electrically in the tissues of the living body, it acts in the nascent state as a caustic or destructive agent almost without pain. The albuminate of soda formed at the silver or electro-negative plate is probably inert, but the electric current certainly exerts some stimulating action, affects the capillary circulation, and so modifies reparative force as to quicken cicatrisation. In the electrolytic dispersion of tumours, caustic or destructive action at the positive pole and the influence of the negative pole upon the vaso-motor nerves of the part are both brought to bear. The more rapid action of the galvanic cautery upon nævus, or as a substitute for the knife, is already sufficiently appreciated; but the slower electrolytic action upon bronchocele, upon fibroid tumours, upon cancer in any of its forms, has yet to be worked out, and I hope that some of you who are now present will not fail to take advantage of so fair an opportunity of doing good and distinguishing yourselves.

You start under immense advantages. When I began to practise surgery, the only test of normal or fever heat was the sensation conveyed to the surgeon's hand. It is hardly more than twenty years since the coincidence of a rigor and high temperature was first satisfactorily proved. Now the most delicate self-registering thermometers are not only carried by every careful surgeon, but every well-trained nurse is taught to make and record as many daily observations as the nature of the case may require. The various forms of surgical fever, pyæmia, septicæmia, erysipelas, are in consequence far better known and more perfectly guarded against, while the ground is cleared for the study of their more successful treatment.

So with the pulse; everyone could count it, anyone could soon learn to distinguish a strong from a feeble pulse, a hard from a soft pulse, a pulse easily compressed from one that was incompressible, a regular from an intermitting beat; but to obtain a trustworthy and exact measure of arterial tension and the influence of treatment upon it, we must have the tracings of the sphygmograph. We are learning from its use after operations that the sthenic pulse with high arterial tension is an important guide for treatment, while the dicrotic pulse of low tension will warn us that septicæmia threatens, if it has not already attacked the patient. As an aid in detecting the effects of alcoholism, the earlier stages of the disease recently described as capillary fibrosis, and of the kidney disease, the sphygmograph may prove of great service to the surgeon who is considering the fitness of a patient for operation. Dr. Mahomed's valuable observations on the exact localisation of an aneurism about the arch of the aorta, and the question of operation for its cure by distal ligature of one or more of the large vessels, are certain to lead to more accurate diagnosis and successful treatment.

In 1853 I introduced the ophthalmoscope of Coccius to the profession in England. One distinguished ophthalmologist still living ridiculed it in print as a toy; another, also happily among us, wrote that in cases of blindness it must be useless, and in all other cases where the retina was sensitive it was too dangerous ever to be employed. This was only twenty-four years ago, and I ask you what would be thought of an ophthalmic surgeon now who attempted to practise without an opthalmoscope? I need not weary you by more than the barest allusion to what has been done by the aid of the laryngoscope and the otoscope, or what may be expected from the endoscope or the diaphanoscope, when the instruments are perfected and their use has become general.

Till quite lately the tourniquet or compression of the main artery was relied upon as the chief means of checking the loss of blood in amputations and other operations. Esmarch's system of

Bloodless Surgery

not only prevents the loss of blood much more completely, but, as the parts operated upon are not bathed in blood, the surgeon can better recognise the nature and extent of disease, and perform many operations more easily with a smaller number of assistants; while the process appears to exercise a favourable influence upon the healing of the wound. The elastic constrictor will take an important place in the armamentarium of the surgery of the future, and no doubt many of the inconveniences ascribed to its use will be avoided when it comes to be more generally practised. So also with transfusion of blood. Dr. Roussel's apparatus for the transfusion of pure blood, and the subject generally, are to be specially discussed at this meeting. I need only therefore express my hope that everyone who practises surgery hereafter will make himself competent to transfuse safely, not only when a patient is bleeding to death after childbirth, or some accident or operation, but in other cases where the blood is insufficient in quantity, or deteriorated in its composition.

A certain section of the community, well meaning it may be, but led astray by thoughtless enthusiasts or self-interested itinerant lecturers, vehemently asserts that if we

are to perfect ourselves in these or in other modes of saving human life, or lessening human suffering, we must only do so by practice upon the human subject; we must not, as a surgeon or a physiologist, take the life of a dog or a cat, a rabbit or a sheep, a pigeon or a frog, for any scientific purpose, or with the object of benefiting the human race. Anybody may slaughter oxen and sheep by thousands for human food in any way he pleases, oysters may be eaten alive, the pheasant or partridge, the fox or the deer, may be expressly reared to supply the sportsman with exercise or the amusement of killing,—in a word, the lower animals may be devoted to the use of man for any purpose that is not scientific. But if a surgeon experimentally sacrifices half a dozen dogs or rabbits in the hope of improving some operation which may prevent the loss of human life or lessen human suffering, he is branded as inhuman, and barely escapes the supervision of the police. Possibly some of these benevolent individuals will voluntarily offer up themselves to our Committee on Transfusion, in the hope of perfecting the practice. Until they do so, they will perhaps be a little less clamorous if a few sheep or rabbits are used in the cause of humanity. With regard to splenotomy, pancreotomy, and nephrotomy, accident has proved that the spleen, or the pancreas, or a kidney may be lost without great injury to the human being. Surgeons have removed a wounded pancreas and enlarged spleens, and a diseased kidney has been extirpated on two occasions at least, but the operative proceedings are still imperfect. Are surgeons to be allowed to excise the spleen or a kidney of a dog or a rat, or will zealous members of some Anti-Vivisection Society enroll themselves as candidates for that immortality which is gained by anyone who immolates himself upon the altar of science?

What is to be the future of nerve-stretching in neuralgia, or of skin-grafting as an aid in cicatrisation or the replacing of lost tissue, it will be for you to say when sufficient observations have been gathered together. And I pass on to speak of some undoubted triumphs of British surgery in our own time. The cure of vaginal fistula was scarcely ever attempted thirty years ago, and the operation was seldom successful when attempted long after that time. It now, even in very unpromising cases, almost certainly ends well in the hands of many operators in many countries.

It would be false modesty if I were not to say boldly before this Association that I am proud of the share which British surgeons have had, and of the share which I myself have had, in placing

Ovariotomy

upon the roll of successful surgical operations. Great leaders among us, Simpson and Syme, Stromeyer and Billroth, Velpeau and Nélaton, have shown a generous appreciation of our work. And can you imagine a greater pleasure to a surgeon than to hear the President of the Medical and Chirurgical Society speak last year of his improvements in the operation of ovariotomy as "one of the greatest achievements of surgery in this century, and that the influence for good extended through every department of operative surgery"? while at the same Society in 1850 Lawrence had asked whether this operation "can be encouraged and continued without danger to the character of the profession."

Less than a quarter of a century after this denunciation Lord Selborne, one of the most distinguished of our Chancellors, publicly stated the result of a calculation, that by my first 500 operations I had added something like 10,000 years to the lives of European women.

What number of operations had been done by other surgeons I know not, but supposing that the same probability of the duration of life applies to the women who have recovered from operations I have done since the results of my first 500 cases were published in 1872, the gain would be about 18,000 years, and this by one surgeon alone, and by an operation which only thirty years ago was denounced as so "fearful in its nature, often so immediately fatal in its results," that, whenever performed, "a fundamental principle of medical morality is outraged."

I should not venture to say all this if it were not by way of encouragement to everyone who hears me to do the work which comes before him, whatever it may be. Nothing could be more unlikely than that I, up till 1855 a naval surgeon, serving in 1855 and 1856 with the army in the Crimea, never having till that time treated a single case of ovarian disease, removing an ovarian tumour for the first time in 1858, and waiting three years before I had done ten cases, should now be able to say that I have completed the operation on 870 women.

And, what is still more gratifying, that I should be able, among the performances of the many surgeons who have been running the race with me, striving with generous rivalry to obtain the reward of those who do good in their day and generation, to refer to the brilliant results obtained by my dear friend Thomas Keith, who, out of 241 operations, has saved 206 lives—a success hitherto unequalled in the history of any capital operation. How ovariotomy, since it has become so generally accepted here, has spread in America, in France, and Germany, indeed all over the world, I have tried to tell elsewhere, and I will not weary you by telling the story again; but I cannot pass from this part of my subject without expressing my confident assurance that what the surgery of the present age has done for the treatment of ovarian tumours the surgery of the future will do for that of uterine tumours. Already large fibroid and fibro-cystic tumours of the uterus have been removed in America by Atlee, Kimball, and others; in this country by Clay, Keith, Bryant, Thornton, Routh, and myself; in France by Koeberlé and Péan, quite in sufficient number, and with results sufficiently satisfactory, to prove that we only require a better knowledge of the details of the operative procedure, and greater experience in meeting the various difficulties which may arise, to place the removal of uterine tumours by gastrotomy amongst the most hopeful of the many lines of thought and action open to the operating surgeon of the future.

But I think those who study and are to become the

Conservative Surgeons of the Future

must not be content with saving limbs only. It is life that must be saved. And the great lesson taught by the success of ovariotomy and of operations for the removal of uterine tumours is, that they must not be done except under the most favourable possible conditions, whether in private houses or in hospitals. We are only just beginning to reap the benefit of the results of the labours of the Health of Towns' Commission, and of the work done by medical officers of health all over the country; and a great deal more must be effected before we can ensure even to the most wealthy of our patients a plentiful supply of pure water, a room well warmed, well aired, and free from the presence of sewer gases, and security from the entrance of infectious disease.

In hospitals the problem is still more difficult; whether the hospital be large or small, old or new. But we do know that overcrowding of any building is of more importance than its size. A large crowded hospital must be a more dangerous place for operations than a small one equally crowded; but a large hospital, where each patient has plenty of space and fresh air, would certainly be a safer place for an operation than a crowded hospital, even though much smaller. In the hospitals of the future, whatever their size may be, the patients must not be allowed to poison each other. And for my own part I would rather operate in a clean, quiet, well-warmed, and well-ventilated building, be it large or small, without any antiseptic precautions, than run the risk of trusting to the neutralising or destructive power of chlorine or iodine, sulphur or tar, borax or the permanganates, salicylic or any other acid, in a place tainted by the presence of sewer-gas, or the seeds of some infectious or contagious disease.

I should have said more on this important subject of antiseptic surgery if the bearing of the germ theory on infectious disease had not been so ably and exhaustively treated by Dr. Roberts in the Address in Medicine, and if in the surgical section a special discussion had not been arranged. But as both these things have been planned as distinct parts of the meeting, I leave what would otherwise have occupied nearly the whole of this address, to ask you for a moment to consider what must be the

Education

of the men who are to advance the science and practise the art of surgery in the future; how some of the best of the men of the coming generation are to be induced to adopt this career.

I need not speak to such an assembly as this in Manchester, where all the essentials of a chartered university already

exist, of the importance, or rather of the absolute necessity, that the surgeons of the future must be educated gentlemen; that we should so order our schemes of education, whether conjoint or not, as to bring into the profession, as far as possible, young men who have had the advantage of the highest general culture to be obtained by an English education. Until this is secured the flower of our university youth will still choose the church or the bar, the army or the navy, or some branch of the civil service of the State, where they at once take an enviable social position as members of an honourable profession, and where a successful career may lead to a seat in the House of Lords, to the pensions and titles freely granted to the fortunate soldier and sailor, and, more sparingly, to the meritorious civil servant of the Crown.

It is rather surprising that, without any of these inducements, and in spite of the taint of trade forced upon the profession by the powers of the Apothecaries' Company, and its continued alliance with our colleges and universities, we still have abundant evidence of a rapid rise of the profession in the social scale. Apart from examples at home familiar to us all, the marriage of the German surgeon, Esmarch, to a princess of his own country is even a less striking indication of a change for the better in the social standing of our profession abroad than the fact, much less generally known, that a Royal prince by birth, Prince Charles Theodore of Bavaria, is a doctor of medicine, is known to be a clever operating ophthalmic surgeon, and has written a very able article, published in a late number of Virchow's Archives on leucocytes in the substance of the brain in various diseases.

When German princes practise surgery, and a brother of an English earl, a Cabinet minister, is met with as a practising physician, we may think less of the admission of members of our profession into royal and noble families, and look with more hope for recognition by the Government of services rendered by medicine and surgery to the nation. We shall not then have to notice anything so disheartening to a learned profession as the fact, that while for the affair of Magdala Lord Napier was honoured by a title and rewarded with a pension, the extended average duration of life of the whole population and its actual increase, due to sanitary and medical science—far exceeding in importance the annexation of a province, or even of a kingdom,—has earned for Simon the barren right, shared by many less honourably known men, of putting the magic letters C.B. after his name, and William Farr still remains without any mark of national gratitude.

Why should a baronetcy be the highest titular distinction conferred upon members of our profession? Is Jenner or Paget less worthy of a life-peerage than any one of the eminent men who now sit on the bench of bishops, or any of the lawyers, soldiers, or sailors who have been rewarded by hereditary peerage? Can any member of the House of Lords do greater service to his country in that assembly than would such a wise and learned physician as Watson, who so very lately has proved himself capable of the highest efforts of statesmanship by his remarkable essay on the abolition of zymotic disease?

Since the health of the people is, or should be, one of the first objects of legislation and administration, the help of acknowledged masters of sanitary science is indispensable. That want, now manifest in the recent ill-devised Acts of Parliament, and the imperfect machinery put in action for their execution, must force upon the nation the conviction that medical science ought to be properly represented in Parliament, and especially in the House of Lords. None of our leaders have time for electioneering or the turmoil of party struggles in the House of Commons; whereas many of them are well fitted for the more dignified position and would be quite able to devote their time and energy to sanitary legislation in the senate.

And what a task lies before the medical statesman! Never in the whole history of our profession have we had so much work to do, such problems to solve, so many human beings dependent for their health on our knowledge and our care. The Roman empire in its greatest power sinks into insignificance in comparison with the dominions now under the sway of Queen Victoria, Empress of India. Two hundred millions of human beings in India, other millions in Africa, Australia, New Zealand, the islands of the Pacific, in Canada, and the West Indies are affected for good or for evil by the action of the sanitary advisers of our Government. At home, until we can disband the great army of paupers, we must at least save them from preventable disease, and the multitudes of our neglected children must be taught some elementary facts necessary for the preservation of their health and the prolongation of life. The day cannot be far distant when this will be done by Parliament under medical guidance.

But until that day comes, it is for this great Association, for every member of it, to strive to secure for our countrymen and our dependants protection from the effects of incomplete and neglectful legislation. And there is ample encouragement to set to work at once, earnestly and with set purpose, acting in the spirit of the noble motto of the French Society of Surgery:

Verité dans la Science,
Moralité dans l'Art.

If, in the forty years since this Association was founded, the great progress which I have so hastily and imperfectly endeavoured to review has been made, what may we not augur for it in years to come? The Association had its early struggles, and has passed through them. It is now powerful and vigorous; its organisation is almost complete, its resources are yearly increasing, and its influence, through its annual meetings, its branch operations, and the wide circulation of its invaluable Journal, is universally felt. The history of the past and the study of the present, alike help us to look forward with hope and trust to the future.

"Look not mournfully into the Past. It comes not back again. Wisely improve the Present. It is thine. Go forth to meet the shadowy Future without fear and with a manly heart."

ABSTRACT OF A

Lecture

ON

THE MORE USUAL METHODS OF ARTIFICIAL RESPIRATION.

WITH DEMONSTRATIONS OF THE "DIRECT METHOD" OF THE AUTHOR.

Delivered at King's College Hospital July 7th, 1877,

BY BENJ. HOWARD, A.M., M.D., M.R.C.S. ENG.,
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GENTLEMEN,—In as short a time as possible, I propose to give as good a demonstration as I can of the commonly accepted methods of artificial respiration; to point out what appear to me faults in those methods, and to exhibit another method of whose relative merits you may form your own opinion. Proposing this, and this only, we will skip the anatomical and physiological preamble, so superfluous with such an audience, reminding ourselves, however, at the start, that respiration, though as a function vital, as a process is strictly mechanical.

In the adult male before us, above the fifth rib you observe in his present state of rest no respiratory motion at all, the provision for it being slight, and the occasion for it comparatively infrequent. Below this point entirely, occurs such respiratory motion as is necessary to life, whether the respiration be inferior-costal, diaphragmatic, or mixed; and, further, these motions, as you now observe them, are a correct guage always—other things being equal—of the amount of actual displacement and interchange of air within the thorax, as they are also indeed the sole means of obtaining and regulating that interchange.

The relation between these movements and this interchange is the same whether the initial cause of the movements be a vital impulse from within, or a mechanical force

from without, the lungs, notwithstanding their elastic properties, acting, practically speaking, in mere passive compliance with the changing thoracic capacities.

Since the discovery by the great Marshall Hall of the gravitation of the flaccid tongue in apparent death, in addition to imitation of the respiratory movements observed in nature, this obstacle in all methods of artificial respiration has claimed the first attention. Then, as to-day, whatever the process employed, in artificial respiration there have been just three objective points, and these cover the whole subject:—

1. A clear passage through the lips to the lungs.
2. The greatest possible expansion of the thorax.
3. The greatest practicable diminution of the thorax;—the two latter occurring with regular alternation and rhythm.

These, with such important though incidental considerations as simplicity, ease of performance, &c., are also not only the objective points, but the test points of every method.

The methods of Marshall Hall and Silvester being those in general use in this country, I will begin with a demonstration of the method of Marshall Hall, reverence for whose memory and greatness makes any criticism which may follow an uninviting and reluctant task.

[The lecturer here gave a demonstration in detail of Marshall Hall's method, remarking]

This method, not inaptly called by its author the "postural method," consists, as we have seen, essentially of two positions, the prone and the supine. The prone position of the whole body was adopted—1st, to extrude the obstructing tongue from the throat, and allow air to enter the lungs; 2nd, that the weight of the trunk might compress the thorax, hence called the "position of expiration."

To what extent the prone position does extrude the tongue is uncertain; if it does so at all, however, the position being the "position of expiration," it is but too manifest it does so precisely at the wrong time, when it is intended air shall *not* enter the chest; the tongue sliding back again simultaneously with the movement towards the supine position, the "position of inspiration," by which it is intended air *shall* enter the chest.

As regards the compression of the chest, the second object of the prone position, you observed that, lying upon his side, the weight of the patient's trunk rested upon his left shoulder and hip, like a bridge upon its piers. That when the shoulder was still more raised by a pillow, as directed, the part of the chest to be compressed formed the highest part of an arch, beneath which, even during extra pressure from above, I could move my arm freely; the pressure caused the arch, spine and all, to yield, but there being no pad or means of resistance beneath, compression was impracticable, the diminution of the thorax was slight, and that chiefly on one side.

As regards the second objective point with which we started—viz., "the greatest possible expansion of the thorax," evidently no expansion was contemplated by the author of the "postural method" beyond that attending the rebound to the point of departure on desisting from the attempt at compression. Although using great effort upon the patient, you saw just now that I was unable by this method to elicit an involuntary gasp, or to produce decided embarrassment of his ordinary breathing. You must also have observed the fatiguing labour in this method, and the difficulty of managing the limbs of the patient, difficulties which, as I know from trying experience, are to an ordinary man almost insurmountable for long continuous periods, when the patient is tall or heavy, flaccid and apparently dead. Whatever good there may be in this method must not be expected from it without skilful precision, while, performed otherwise, the excess of motion it is to be feared, must, in many cases, do only harm.

For the simple matter of withdrawing the tip of the tongue and compressing the chest, this method is sufficiently elaborate and classical; but it is in no sense a "ready method," nor do the cases which have recovered under it give accurate proof of its being a successful method.

The demonstration of the next method awaiting our consideration will, I am sorry to say, be robbed of its principal interest for you by the absence of its distinguished author, Dr. Silvester, of London, who would have made it, I am sure, more satisfactorily than I can hope to do. Subject to any suggestion from the hospital staff and others near me, I will, however, show you as well as I can the details of this method, known sometimes by the name of its author, sometimes as the "physiological method."

[Silvester's method was here carefully demonstrated.]

In this method, for the withdrawal of the tongue from the throat, it is simply seized as we have seen by the finger and thumb, and in the most natural way in the world pulled forwards. For keeping it so, however, the proposed elastic band is inadequate; while closing the teeth upon it is severe, and simply changes the site of the obstruction from the throat to the lips. The extension of the arms for plus thoracic expansion is doubtless one of the most substantial steps made towards artificial respiration, up to the date of its introduction. Though the traction which can be made upon the ribs—the muscles flaccid as in apparent death—may bear little comparison to what is observed in life, some expansion is certainly obtained, notwithstanding the following faults. On looking at the position of the patient, in consequence of the cushion being where it should not be, and not being where it should be, you observe the head and shoulders are so much raised by it that there is danger of flexion of the neck at the line of the epiglottis. The thorax is flexed upon the abdomen; the lower ribs, by the weight of the head and shoulders and by the flexion, are pressing upon each other from above downwards; the abdominal viscera are pressing from below upwards; both crowding towards and embarrassing the intervening diaphragm. The cushion beneath and behind the shoulders supplies counter-extension, which is not wanted. For these reasons in part, even though the extension were greater, as it might be, the greatest possible thoracic expansion is by this method unattained.

In the movement for expiration by Silvester's method, the first fault observable is that which I explained when exhibiting the "postural method," and which arises from the malposition of the cushion, so that in this, as in that method, beneath the point pressed there is no provision for resistance or counter-pressure. Further, you observed, perhaps, that standing behind the patient's head and leaning forward over his face as directed, I could not comfortably reach the ribs requiring to be pressed with greatest force, and so could apply but little more pressure than the mere strength of my hands afforded. Also, that, owing to my position, the direction of the force, instead of being inwards and upwards towards the diaphragm, could only be conveniently applied downwards, or downwards and inwards, away from the diaphragm.

To diminish still further this weakened and misdirected force, between my hands and the ribs to be pressed were interposed, as directed, the large irregular elbows of the patient, as the media and minimisers of it.

For these reasons the compression required is not satisfactorily accomplished, and the diminution of the thorax is much less than is desired.

As in the postural method, so also in this, you observed that, though trying, and I am sure thoroughly, I was unable on either occasion to compel a forced inspiration, the demonstrations by either method giving but little disturbance to the ordinary breathing.

I ought to add that in both methods, in cases of drowning, in the attempted removal of fluids from the stomach or chest, the cushion is placed beneath the shoulders, the patient being of course face downwards, making the mouth the highest point, the stomach relatively the lowest. Thus we have a reversal of the ordinary rule of drainage, and fluids or other substances gaining the pharynx on their way outward from the stomach may in part return, finding their way into the trachea.

Further, the pressure, as directed upon the back, being opposed, as I now show you, by no resistance beneath, neither compression nor ejection, nor drainage either, can, as I have explained, be effectively accomplished.

To demonstrate more thoroughly the method I have now to introduce to you, I will ask this patient, who has not the slightest idea of the method in question, to be kind enough to consider himself just dragged ashore and apparently dead from drowning. For our part, instantly we rip away his wet clothing to the waist, and of it make a large, firm, solid bolster. Quickly turning his face downward, the bolster beneath the epigastrium, making that the highest point, the mouth the lowest; placing both hands upon his back immediately above the bolster, my whole weight is thrown

forcibly forward, compressing the stomach and lower part of the chest between my hands and the bolster for a few seconds two or three times with very short intervals.

Thorough drainage being combined with thorough compression, the lungs, if they require it, are relieved of water; the stomach, if distended, of its surplus contents, forcible ejection making the process pretty complete. Should this effort happen to have been superfluous, no time has been lost, an efficient means of artificial respiration having by this process been already commenced.

Quickly turn the patient on his back, the bolster beneath it making again the epigastrium and anterior margins of the costal cartilages the highest point of the body, the shoulders and occiput barely resting on the ground.

Seize the patient's wrists, and having secured the utmost possible extension with them crossed behind his head, pin them to the ground with your left hand, so as to maintain it.

With the right thumb and forefinger armed with the corner of a dry pocket-handkerchief, withdraw the tip of the tongue, holding it out of the extreme right corner of the mouth. (This is the easiest, least barbarous, and firmest way of holding the tongue.) If a boy be at hand, both wrists and tongue may be confided to his care.

In this position, please observe two-thirds the entrance to the mouth is quite free, and the tongue is immovably fixed forward. The epiglottis, by this backward curvature of the neck, is precluded from pressure and partial closure from the undue flexion of the neck so frequently observed. The head, as Nélaton urged, is thoroughly dependent. The free margins of the costal cartilages are as prominent as they can be made, and there is a degree of fixed thoracic expansion not obtainable, I believe, in any other manner. The epigastrium being the highest point, the abdominal viscera, instead of embarrassing the movements of the diaphragm, tend to gravitate away from it.

To produce respiration, you now kneel astride the patient's hips, rest the ball of each thumb upon the corresponding costo-xyphoid ligaments, the fingers falling naturally into the lower intercostal spaces. Now, resting your elbows against your sides and using your knees as a pivot, throw the whole weight of your body slowly and steadily forward until your mouth nearly touches the mouth of the patient, and while you might slowly count one — two — three; then *suddenly*, by a final push, spring yourself back to your first erect position on your knees; remain there while you might slowly count one—two; then repeat; and so on about eight or ten times a minute. ..... Lest your applause may have arisen from a mistake after the first one or two movements, I will ask you to watch more carefully the effect of a longer repetition. [Demonstration repeated.] It is gratifying, gentlemen, to see that whereas on our very first effort the patient could not withhold an involuntary gasp, as we continue he comes increasingly in our power; and now suddenly desisting, from the farthest seats I think you plainly see, not only a pronounced heave, but successive waves of involuntary respiration which the patient cannot control.

This method is called the "direct method," because by it the few things needed to be done are, simply, done. The tongue needs holding forward—it is held; the ribs, pressing—they are pressed. It is so simple, that a Harbour policeman, after a single lesson, has done it as well as I or any other always distant physician could do it. It is not fatiguing; the force employed is the weight of the operator, who remains in an easy position with alternations of complete rest. It can be practised by anybody, anywhere; before division of the funis, or after; in a bath, bed, or boat; and such adjunctive measures as friction, electricity, insufflation, or even tracheotomy, can be used simultaneously.

I have thus, gentlemen, in a very hasty and informal way, endeavoured to demonstrate the leading practical points of this subject. Trusting to your forbearance, I have tried to show you what appear to me as faults in the methods with which you are most familiar, and have submitted to your attention the "direct method," of the merits of which you will have a right to your own opinion. By this method I think there is obtained—

1st. *A clear passage through the lips to the lungs.*

2nd. *The greatest possible expansion of the thorax.*

3rd. *The greatest practicable diminution of the thorax;* the last two occurring with regular alternation and rhythm.

And I think you have observed that in our demonstrations this afternoon these objective points have been obtained with more ease, completeness, and promptness by the "direct method" than by either of the others exhibited.

ON TWO CASES IN WHICH THE EXTERNAL ILIAC ARTERY WAS SUCCESSFULLY TIED FOR THE CURE OF ANEURISM:

WITH OBSERVATIONS ON THE FORMATION AND GROWTH OF A SOLID FIBRINOUS TUMOUR IN THE SAC; ALSO, ON THE OCCURRENCE OF THREE ANEURISMS IN THE SAME ARTERY, AND ON THE TREATMENT OF GANGRENE AFTER LIGATURE.

BY OLIVER PEMBERTON, F.R.C.S. EDIN.,

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(*Concluded from page* 156.)

THE liability of gangrene to occur after ligature of the external iliac under ordinary circumstances is not excessive, having regard to the proneness to gangrene exhibited in the lower extremity after the circulation through the main vessel below Poupart's ligament has been arrested for the cure of aneurism or hæmorrhage. Indeed, it will compare favourably, in this respect, with ligature of the femoral itself under similar circumstances. Thus, of forty-six deaths after ligature of this vessel recorded by Norris,[1] twenty-three died of gangrene, or 50 per cent.; whilst of forty-three deaths after ligature of the external iliac there were but seventeen died of gangrene, or under 40 per cent.

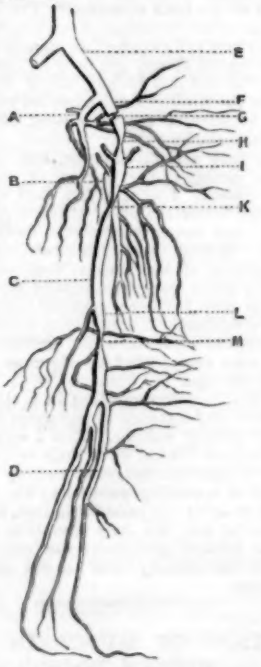
Sir Astley Cooper's[2] dissection of a successful case eighteen years afterwards demonstrated the character and extent of the anastomosing vessels that would carry on the circulation when the external iliac had been tied, and I shall deem it necessary to refer particularly to the conclusions thus arrived at, because without some such reference I should be unable to make manifest the difficulties encountered in this case to keep vitality in a limb in which four barriers to the circulation had been erected instead of two.

After ligature of the external iliac under ordinary circumstances, the principal anastomosing vessels concerned in carrying on the collateral circulation are the following. On the proximal side of the ligature the branches of the internal iliac are almost solely concerned in its establishment, and on the distal side the blood is abundantly brought up by three large trunks—the circumflex ilii, the epigastric, and the profunda. In Sir Astley Cooper's case—the one in question—these vessels were found to have thus developed their anastomosing channels. An anterior set, including, first, a very large branch from the ilio-lumbar to the circumflex ilii; secondly, a plexus between the pubic branches of the epigastric and obturator, passing over the pubic brim of the pelvis. An internal set—namely, a free plexus between the obturator and internal circumflex of the profunda, situated amongst the adductor muscles on the inner side of the thigh. A posterior set—namely, a plexus at the back of the thigh between the sciatic and gluteal branches of the internal iliac on the one hand, and the internal and external circumflex of the profunda on the other. These three collateral arches are usually more than enough to establish a free circulation, and, in the case of obstruction in the common femoral cutting off the first two arches, the profunda will usually amply suffice. When, however, in addition, a third barrier exists in the course of the superficial femoral, the supply from this latter must also cease. It would appear that even then a very considerable amount might be brought into the main trunk from one or two sources. The principal of these will probably be found at the back of the thigh, in an enlargement of the branch of the sciatic artery accompanying the great sciatic nerve anastomosing below with muscular and cutaneous branches of the popliteal. Another would probably be by the development of a plexus on the outer side of the limb, establishing an indirect communication between the sciatic and gluteal

[1] American Journal of Medical Science, Oct. 1849. Ibid., vol. xiii., 1847. Ibid., vol. xlviii., 1864. Quoted by Holmes, System of Surgery, vol. iii.

[2] Guy's Hospital Reports, vol. i., 1836, p. 43.

of the internal iliac above and the superior external articular of the popliteal below through the medium of the external circumflex, the *upper* branches of which communicate with those of the former arteries, and the *lower* with those of the latter. To this latter source of supply the anastomotic would also contribute by its free inosculation with the arteries around the knee. But should there be a fourth barrier existing about the middle of the popliteal, some of this supply must cease, leaving as the only means of bringing up blood into the tibials the lower articular branches of the popliteal and the recurrent of the anterior tibial, thus establishing, even at the most, but a very indirect circuit—namely, the general arterial anastomosis of the articular arteries around the knee, and their communications above with the external circumflex of the profunda, below with the recurrent branch of the anterior tibial and the lower articular arteries of the popliteal.



A. Internal iliac artery. B. Profunda femoris. C. Superficial femoral. D. Tibial arteries. E. Common iliac artery. F. External iliac artery. G. Seat of ligature. H. First aneurism. I. Common femoral. K. Second aneurism. L. Popliteal artery. M. Third aneurism.

It is clear, therefore, should the force of the arterial current be sufficiently and rapidly developed in any given limb embarrassed by the obstructions to which I have referred, that by the existence of this extensive arterial chain of secondary arches the circulation might be carried on, even should the whole length of the main trunk be impervious; the consideration of which fact may lead us to entertain some hope that a limb might yet be preserved when placed under similar circumstances.

I must own that I felt it to be a question, not whether gangrene would take place, but how much of the limb could by any possibility of means escape destruction. As it happened, it is doubtful if the main trunks in the limb were not from the outset completely blocked, the vitality being maintained by the general anastomosis of minute arterial branches throughout the limb, having their primary sources of supply from the great arterial trunks above the ligature. These enabled the blood to creep downwards in the first sustaining efforts as far as the middle of the leg, but not in sufficient quantity or sufficient force to support life; and hence, in addition to the foot and lower third of the leg perishing at once, it was evident that much above must also perish by slow starvation, or be, during the growth of the collaterals, in imminent danger.

As far as I am aware, there is no case on record in which, during life, a main artery has been ligatured for the cure of three aneurisms situated in the continuity of the same vessel, though I am able to refer to instances where this has been practised in the face of two.

A case of double aneurism affecting the right external iliac and the right popliteal arteries is recorded by Mr. Hilton in the Medico-Chirurgical Transactions, vol. xxxii., p. 309. A complete cure was obtained by compression applied over the common iliac, and subsequently the femoral arteries, by means of a tourniquet, the patient being under chloroform. The treatment extended over twelve days, and in the end recovery was perfect, though immediately on the cessation of pulsation the temperature and sensation of the limb sank so low as apparently to have excited Mr. Hilton's alarm.

Another is reported in the *Edinburgh Medical and Surgical Journal* of January, 1816, p. 71, by Mr. Newbigging. The patient had a small aneurism in the inguinal region and another in the ham of the same side. The external iliac was ligatured. Pulsation in the popliteal tumour immediately ceased, but that in the inguinal tumour, though very much lessened, continued perceptible for about a fortnight, "evidently dependent on anastomosing vessels (circumflex ilii)." Ultimately both were quite cured.[3]

Now in these instances of multiple aneurisms, the operation was not followed by gangrene, and it will be further observed that in both cases the aneurisms were placed in the groin and in the ham. It is fair, then, to infer that the determining cause in my case of the gangrene was due to the embarrassment to the circulation arising from the third aneurism, situated at Scarpa's point, by which means any material flow of blood into the branches of the profunda must have been almost entirely arrested.

The prognosis of amputation for gangrene following ligature of a main artery is most unfavourable. In nine cases in which it occurred after ligature of the external iliac, according to Erichsen,[4] eight were fatal, one only recovering by amputation. Porta[5] estimated it, after ligature of the femoral artery, at 71 per cent.

The great difficulty will always be the determining the period when to interfere. The very decided recommendations of some surgical writers at least require qualification: thus, what will be regarded by all practical surgeons as a judgment based on personal experience, from the recognised position of the author, appears from its decisiveness to afford no alternative. Mr. Spence says, "In gangrene after ligature of the main vessel of a limb, if the gangrene be decided and is spreading, amputate at once."[6] The same view is entertained by Erichsen:[7] "when mortification has fairly set in, amputation of the limb should be performed at once, as the only chance of saving life." On the contrary, Fergusson,[8] whilst admitting that he has followed the teachings of Larrey and Lawrence, owns that the "success" was very different from what he anticipated; six such cases, in his recollection, having all proved fatal, two of the six certainly being cases analogous to my own—namely, gangrene following spontaneous obstruction of a popliteal aneurism, and gangrene following ligature of the femoral artery. Sir William adds, he might possibly in future resort to a similar practice, but should feel very greatly inclined to wait for a line of demarcation, although even here he would not be very sanguine as to the result. Probably in this recommendation the eminent authorities I have mentioned are only thinking of moist gangrene, but surely the gangrene that follows ligature of a main trunk must from time to time be "mummification"; and here I venture to assert the rule of non-interference until "demarcation" should be made absolute, and it is an open question if waiting would not be quite as successful as amputating even in the moist form.

A case happened to me early in my surgical practice that strongly impressed me as to the dangers surrounding amputation in the face of spreading gangrene following ligature

[3] A case of multiple aneurism in the same artery is recorded in Sir Astley Cooper's paper, "An Account of the Anastomosis of the Arteries of the Groin" (Med. Chir. Trans., vol. iv.), but blood passed through them, and only one was blocked by the ligature.
[4] Science and Art of Surgery, vol. ii., p. 101.
[5] Quoted by Holmes, System of Surgery, vol. iii., p. 478.
[6] Spence's Lectures on Surgery, 1868, p. 86.
[7] Op. cit., vol. i., p. 108.
[8] Practical Surgery, 1870, p. 105

of the main artery; and as it is illustrative of one or more points in addition, and has never previously been published, I refer to it at this time.

T. G——, aged twenty-six, was wounded in the left axilla by the accidental discharge of a gun on the evening of the 22nd of May, 1853. Blood issued from the wound "like a fountain," and he fainted almost immediately. In ten minutes the surgeon who saw him found about eight or ten shot-holes in the skin opposite the lower border of the latissimus dorsi muscle. Further hæmorrhage was arrested by the application of a sponge and a roller. On June 1st, ten days after, a pulsating tumour was perceived about the shot-holes, to which pressure was applied. — 4th: Tumour larger. A consultation resulted in an increase of pressure.— On the 11th, twenty-one days after, there was considerable hæmorrhage, which stopped spontaneously.—12th: Hæmorrhage. — 13th: Hæmorrhage; shivering; with increase in the tumour and presence of swelling along the course of the brachial artery.—16th: Hæmorrhage.—18th: Hæmorrhage, arrested by pressure.—27th: Hæmorrhage at intervals since the last date. Admitted into the hospital under my care, and seen by myself for the first time on the following day.

Condition. — Pale, but otherwise healthy. The openings of the shot are seen to occupy the course of the brachial artery just at the edge of the axilla, the parts around which are greatly infiltrated. There is a strong thrill felt through the bandage and sponge, extending along the lines of the axillary and subclavian arteries. A loud cat-purring murmur is audible in the course of the injured vessel, behind the head of the humerus and about the dorsum of the scapula.

On the 30th I proceeded to cut down on the injured vessel, and on drawing the arm from the side an immense gush of arterial blood took place. The subclavian being controlled by pressure on the first rib, and a finger being pushed against the bleeding spot, I completed an incision of about six inches long, starting from the axilla in the direction of the brachial artery; the parts were, however, so completely disorganised that I abandoned the attempt to secure any vessel there, and, dividing the great pectoral muscle, tied the axillary artery as it lies beneath with a piece of whipcord.

After this there was no hæmorrhage for eleven days; then it occurred (July 11th) at the old wound, and stopped spontaneously. The arm and hand œdematous; no radial pulse; commencing gangrene. On the 13th, hæmorrhage was arrested by finger pressure in the wound.

July 16th.—Amputation at shoulder-joint. The limb being separated, I proceeded to examine the stability of my ligature on the axillary, which had remained untouched; and as I gently lifted it up for this purpose, it yielded its attachment, and was instantly followed by such a rush of arterial blood that left no doubt as to the main vessel being completely open. A moment was sufficient for the finger of an active assistant to close the open mouth; and as speedily as the difficulty of a raised shoulder would permit—for I dared not press it down for fear of imperilling his position with the bleeding vessel,—I placed a ligature around the third part of the subclavian and all bleeding ceased. For a few days all went well, when gangrene attacked the flaps, and the patient died of exhaustion on the 24th, eight days afterwards, there having been no recurrence of the hæmorrhage.

Reviewing this case now, I regret that I did not at once amputate at the shoulder on the patient's admission. The six weeks' disorganisation from bleeding, pressure, and infiltration laid the foundation of imperfect circulation in the limb that was completed afterwards by the ligature of the main vessel, and rendered the advent of gangrene, even in the upper extremity, extremely probable. Amputation conspicuously failed to arrest this, and spreading gangrene, not hæmorrhage, was the direct cause of death.

For the rest, it is only necessary to remark that Mr. Guthrie's counsel to tie both ends of a wounded artery appears specially applicable in the early history of such a case as this.

There may be instances, I admit, in which too long delay may appear to have conduced to a fatal exhaustion; but for my own part I should far more be in dread that premature attempts to separate the dead parts would effectually destroy the last hope of recovery.

My view has always been that the more nearly one can assimilate the gangrene that follows ligature to the gangrene that we call "senile," the better chance there will be of saving the patient's life. Senile gangrene is eminently a dry process of death, and consequently, if kept so, is usually unattended by dangerous putrefactive changes. My endeavours were to keep my patient's limb with the epidermis unbroken to approach as nearly as possible to this dry gangrene, so as to escape putrefaction until the neighbouring parts should have recovered strength through enlargement of anastomosing branches.

There were two circumstances that aided success. The first, the very fortunate absence of any venous obstruction; and very remarkable indeed was the existence of this fact in the case, considering that two of the aneurisms were by no means small, and were certainly large enough and abundant enough to have exercised some interference with the return of blood in the accompanying vein; but there was no œdema of the limb whatever.[9] The second was the using of the unbroken covering of carbolised cotton-wool. To these I attribute the gaining two months of progressive gangrene unattended by any grave constitutional disturbance. Then came the real danger, but it was encountered at a time when the vitality in the parts above was becoming assured so as to promise the permanent establishment of the line of demarcation.

Both before this period, however, and at the onset of decided septic changes, the subject of amputation was raised and discussed. I always felt that the longer this was delayed the better chance of ultimate recovery, and in this opinion I was strongly supported by the judgment of Mr. Crompton. If it be an admitted fact, recognised by all who know anything of the matter, that any operation in the presence of senile gangrene, beyond separating a dead portion of bone and folding a granulating surface, cannot too strongly be condemned, surely such experience pressed with double force in a patient whose constitutional powers of endurance were represented by vigorous middle life as compared with old age.

I feel justified in recommending in a similar case, and indeed in almost any instance of gangrene following ligature, the most patient waiting. Had I amputated at the end of two months, I must have done so above the knee, and have had to meet the danger of cutting through parts in the vicinity of spreading gangrene; but by waiting another month I secured my permanent line, saved the knee-joint, and carried out the only operation that promises success in this form of gangrene—the completing the amputation which had already been all but accomplished by natural processes.

THE ACTION OF MUSCARIN ON THE HUMAN BODY.

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MUSCARIN, the active principle of poisonous fungi, was first extracted from the *Amanita muscaria*, and physiologically tested by Schmiedeberg. His conclusions regarding this substance have been confirmed and our information extended by the researches of Koppe, Prevost, Alizon, Lauder Brunton, and Schiff. Great interest attaches to muscarin on account of the close similarity of its action to pilocarpine and its almost complete antagonism to atropia. It excites copious perspiration and salivation, a flow of tears, and it increases the intestinal mucus, and the biliary and the pancreatic secretions. Muscarin affects especially the heart and intestinal canal. It produces "uneasiness in the stomach, vomiting, purging, a feeling of constriction in the neck, want of breath, giddiness, fainting, prostration, and stupor."[1] The stools sometimes contain mucus or

[9] "The principal cause of this gangrene is narrowing or obliteration of the neighbouring venous trunk from pressure of the tumour."—Erichsen, op. cit., p. 101.

[1] Lauder Brunton.

even blood. Topically applied, the merest trace at once arrests a frog's heart. It slows the heart of mammals, reducing the beats from 120 to 60, 40, or even to 9 beats per minute, and sometimes it causes intermittency. M. Alizon maintains that it first quickens the heart. It arrests the heart in diastole, according to Prevost, by exciting the intracardiac nerve-centres. It diminishes blood-pressure partly by its action on the heart, but partly by dilating the bloodvessels. Respiration is depressed in proportion to the depression of the pulse. It causes strong contraction of the intestines and bladder; it lessens urinary secretion, even to the point of suppression; it contracts the pupils.

In all these particulars atropia promptly antagonises muscarin. When a frog's heart is arrested by the topical action of a minute quantity of muscarin, the application of a little atropia will immediately restore the pulsations.

Lauder Brunton has shown that muscarin has a singular effect on the pulmonary vessels. Schmiedeberg had noticed that muscarin produces intense dyspnœa—a condition in which the arteries contain very little blood, scarcely bleeding when cut across. Brunton's experiment on a narcotised rabbit shows that this dyspnœa is due to the muscarin causing strong contraction of the pulmonary bloodvessels, so strong that the lungs become blanched, and, owing to the contracted state of the pulmonary bloodvessels, the right side of the heart becomes greatly distended. A small quantity of atropia injected into the jugular vein at once removed this spasm of the pulmonary vessels, and unloaded the gorged right heart.

Schiff believes that poisonous mushrooms produce other symptoms than can be accounted for by the action of muscarin, as restlessness, convulsions, and dilatation and contraction of the pupils; and he is led to believe that poisonous mushrooms contain two active ingredients—one having an opposite, the other a similar, action to that of atropia.

Our observations were undertaken to endeavour to ascertain whether the action of muscarin on man is identical with that on animals. The muscarin we employed was synthetically prepared by Merck, of Darmstadt, and kindly obtained for us by Mr. Gerrard, teacher of pharmacy at University College. In the following experiments we administered the drug hypodermically. We made thirteen experiments on four men, seven, three, two, and one on each respectively. These men, it is well to state, were not in good health; three were in a delicate anæmic condition, the other had slight fever from some obscure cause, though his pulse was not quickened.

A large number of preliminary observations were made to ascertain the minimum dose adequate to produce symptoms. This we found to be a third of a grain given hypodermically.

We find that the action of muscarin on man is identical with that on animals. It contracts the pupil, excites profuse perspiration, free salivation, running at the eyes and nose; it purges, sometimes excites nausea and vomiting, and a strong desire to pass urine.

We shall now speak more in detail of these different effects.

Perspiration.—Sweating occurred in eleven of the thirteen experiments. Half a grain made it free, whilst larger doses, as three-quarters of a grain and a grain, rendered it very abundant; indeed, it was sometimes as free as the perspiration excited by a third to half a grain of pilocarpine. The perspiration stood in large drops on the face after the larger doses, the night-dress became soaked, and the skin felt sodden. In one man, though we gave one-third of a grain and one grain respectively in two experiments, we produced no sweating, but free salivation, amounting to four ounces. Perspiration began in from three to fifteen minutes, occurring earliest after the larger doses. It lasted from half an hour to an hour and a half. On testing the reaction of the sweat in six experiments, we found it neutral in four and alkaline in two.

Salivation was not so constant as perspiration; moreover, the saliva varied in quantity more than the perspiration, corresponding in this respect to pilocarpine. Salivation occurred in eleven experiments, and was absent in four. In three it was slight, in the rest free or profuse. It began in from two to fifteen minutes, and lasted from twenty to eighty minutes.

Lachrymation occurred in eight cases, amounting in some instances only to suffusion of the eyes, but generally the tears trickled down the face, so that the patient was obliged to wipe his eyes. It began in six to ten minutes, and lasted generally about twenty to thirty minutes.

Purgation.—In the cases in which it purged the injection took effect in from ten to twenty minutes. In two experiments the drug excited an inclination to pass a motion; in four experiments on the same man it produced a loose motion, one of a green colour, though his bowels were opened naturally a short time previously.

Pulse.—In one of our four men the pulse was always very quick; in the other three it was natural. The effect on the normal frequency was *nil*, or almost *nil*, though in one man, on whom only one observation was made, it reduced the frequency ten to sixteen beats. The medicine reduced the quick pulse from 121 to 80 and 60 beats per minute. Our observations are too few to enable us to speak with certainty of the influence of muscarin on the pulse, but it appears to us that the doses we employed affect the frequency very little, but the larger doses made the pulse softer and more compressible.

Respiration.—The rate of breathing was unaffected in every experiment.

Sight.—We have notes of the state of the pupils in only ten experiments. In each case the pupils became contracted, often considerably; the contraction beginning in about fifteen minutes. The vision seemed unaffected.

In three of our experiments made on one man with the larger doses, the drug induced vomiting once, and once nausea.

In five experiments the patients were obliged to pass urine in from nine to fifteen minutes after the injection, and two complained of suprapubic pain. In five the drug produced a frequent hacking cough. In none did headache or other nervous symptoms arise.

To show how close is the similarity in the action of muscarin to that of pilocarpine, we give a short account of the effects of the latter drug.

Jaborandi (pilocarpine) flushes the face and produces copious perspiration and salivation. It increases the bronchial secretion, exciting a slight cough, and produces slight running at the eyes and nose. It causes nausea and sickness, and, according to some authorities, diarrhœa, though this never occurred in the numerous experiments made by one of the writers of this paper in conjunction with Mr. Gould and Mr. Murrell. It considerably quickens the pulse. It often produces headache, generally frontal, with heaviness over the eyes, associated with giddiness and a stupid sensation. The sight is generally hazy, and in about two-thirds of our observations, when the drug was applied to the eye, it contracted the pupil, often considerably; though, when administered by the stomach or hypodermically, it had but little influence on the pupil. It often produces suprapubic pain, and still oftener a strong and irresistible impulse to pass urine.

The similarity between the action of muscarin and pilocarpine is evident. There are, however, slight differences. The perspiration and salivation are generally greater after pilocarpine and last a longer time, though possibly larger doses of muscarin might in this respect rival pilocarpine. We are led from our experiments to conclude that muscarin acts rather more on the lachrymal glands than pilocarpine. Muscarin certainly acts on the bowels far more powerfully than pilocarpine. Muscarin internally administered contracts the pupils far more strongly than pilocarpine. On the other hand, jaborandi produces more suprapubic pain, and more frequently and more strongly the impulse to pass water. Moreover pilocarpine produces headache and giddiness, symptoms never yet noticed by us after muscarin. In our experiments with muscarin none of our patients complained of any disturbance of the sight, but on this point we did not sufficiently examine them. Pilocarpine produced a little drowsiness, but we have not observed this after muscarin. In our experiments on man, pilocarpine in every case quickened the pulse, and as this fact has been amply corroborated by other observers, we may conclude that it is established, though Langley, in his experiments on animals, finds that it slows the heart, acting thus on animals like muscarin. In our experiments on man, muscarin produced very little effect on the pulse; if it altered its rate at all, it reduced the number of beats.

Whilst muscarin thus so closely resembles pilocarpine in its action on the body, in one respect it strangely differs. Administered internally, either by the stomach or subcutaneously, pilocarpine slightly contracts the pupil; topically applied to the eye it strongly contracts the pupil. Muscarin, given hypodermically, contracts the pupil far more than pilocarpine; but, strange to say, when applied to the eye itself it widely dilates the pupil. Thus, whilst it is so generally antagonistic to atropia, in this one respect it is similar. In respect to its action on the pupil it corresponds to gelseminum, which, administered by the stomach, contracts the pupil, but applied locally widely dilates it.

We tested the topical effect of muscarin in nine cases, using a solution containing one part of the drug in ten of water. This solution produces very little and only transient smarting. In every case the pupil became dilated, generally widely dilated, the dilatation beginning in from a quarter to three-quarters of an hour, and continuing about twenty-four hours or a little longer. So far as we can judge at present from only a few careful observations, the dilatation interferes very little with the sight.

In some of our experiments it seemed to us that the doctored pupil contracted very slightly before it dilated, whilst in other cases both pupils certainly at first contracted somewhat. To test the early effect of the local application, we dropped some of the solution into a cat's eye, and watched the effect; but, although after a time the pupil widely dilated, we could not detect any initial contraction.

At this point our stock of muscarin became exhausted, and we were therefore reluctantly constrained to postpone further investigation.

CONTRIBUTIONS TO AURAL SURGERY.

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VII.—ON THE LOSS OF HEARING POWER WITHOUT PERCEPTIBLE LOCAL CHANGE.

IN the examples alluded to in the following remarks I presuppose that the conduction of sound to the labyrinth is perfect—in other words, that the external ear, the tympanum, and Eustachian tubes are in each case in a condition of health.

A lady who some few years ago was under my observation went to India to join her husband, and, upon landing, was driven to the house where he had suddenly died a few hours before her arrival. Walking into the house with good hearing, she came out of the room in which her husband lay dead, stone-deaf. In the course of six months she recovered some slight degree of hearing power, but never improved beyond to an extent which made audible a clearly articulated word spoken loudly close to either ear.

A young lady whom I saw in the present year became the subject of a similarly sudden loss of hearing, though in a less degree, upon receiving intelligence of the death of her father. She never afterwards noticeably improved.

That emotional causes exercise a very decided influence on the function of hearing cannot fail to be observed by those who are in the habit of paying attention to affections of the ear. Prolonged anxiety and mental strain, however directed, are quite sufficient to at one time materially damage, at another to destroy in great measure, the function of hearing, without any predisposing cause so far as can be ascertained. Perhaps because women are, more than men, mastered by their emotions, it is far more frequently in their case that such causes appear to exercise an influence in this direction. The absorbing attention with which they tend their sick relatives during long and serious illnesses, the utter desolation which overwhelms them at the loss of those in whom all their interests are centred, will sufficiently explain this. However this may be, it is a matter which admits of no question that when the strain of mental anxiety ends, as it must in the nature of things, in the giving way of some part of the organism, with women deafness and the subjective symptom of tinnitus seem more often due to such causes than in the case of men.

Did I wish, I could enumerate a very large number of illustrations to these remarks, but the two already briefly alluded to are sufficient to indicate the direction which such observations would take. For the rest, it is more fitting that they should be numbered amongst the unrecorded list, in which may be found that sprinkling of romance which obtrudes itself upon all of us in our daily routine of work.

As might be anticipated (although this is not without occasional exception), excessive strain on the intellectual powers is more often with men harmful to the nervous part of the auditory apparatus than is the undue exercise of the emotions. Among barristers, physicians, literary men, politicians, and business men will be found instances where deafness and tinnitus may be traced to overwork. Whilst many of these overworked fail in some other direction than the one here indicated, it happens to such as myself to have brought before their notice the instances in which the hearing becomes the failing part. In looking at this matter in as broad a manner as possible, the question naturally arises—Was not the hearing faculty a weak part of the machine before it manifested symptoms of declining power? With some of these there would seem to be a predisposition (inherited) for the hearing power to decline at the time of life when degeneration commences, but with others no evidence of this kind can be elicited, and such an explanation is often distinctly negatived by the fact that the hearing is lost in early life. It must then suffice for us to recognise such change when brought before us, and use what influence we may have towards restoring the mental and bodily health.

Similar conditions to these, which may be traced to mental causes, again and again force themselves on our attention, and test all our ingenuity to discover the origin of the condition. Exceeding care in clinical investigation will, however, do more in this way than would at first sight appear possible, and cases may, as it were, be placed into classes so defined as to their histories, symptoms, sudden or gradual advent of symptoms, that something like accuracy may be arrived at, not only in such classification, but, what is of more material value, in predictions as to the future prospects of recovery, permanence or certain increase of the loss of hearing to be looked for.

For instance, a young woman who, without any change in the outer or middle ear, becomes deaf during her first confinement, is pretty certain to be subject to an accession of this symptom on every repetition of this event, and will be in danger of increasing it indefinitely if she nurse her children.

The incessant noise which some manufacturing and iron-plating establishments inflict on the ear is shown to be so against what the ear is intended to be subjected to, that extreme failure in its natural functions very frequently is the result.

What happens to some from these oft-repeated sounds is in others effected by a single explosion or noise near the ear. Our sailors and soldiers are too familiar with this, and know well how an unexpected explosion of a gun is to be dreaded, and how far more irretrievably damaging are the explosions from brass guns than from some other kinds. The railway whistle sounded unexpectedly has been, within my knowledge, the means of destroying the hearing of many. This was curiously shown a short time ago in the case of a man whose business made it necessary for him to pass much of his time on locomotives. He told me that whilst on an engine five years ago, the whistle was sounded unexpectedly, and he immediately became and remained intensely deaf in the left ear. Precisely the same accident happened to him in the case of the right ear ten days before I saw him.

With these accidents must be classed those where a slight, unexpected tap on the ear has produced deafness. From all these accidents I exclude those in which the tympanic membrane has been ruptured. In passing, I say of them that the precise lesion is not known, and we are obliged to call it *shock* (whatever that may mean), and to conjecture, and to perhaps suggest rupture of a small vessel in the labyrinth—in short, an apoplexy. With as fair a show of reason, we may conjecture in a like way on the lesion in those cases which for want of a better name have lately been spoken of as Menière's disease. A man or woman falls down in a giddy fit, perhaps vomits, and on recovery is found to be very deaf in one ear; or a giddy fit is followed by a loss of hearing. The loss is intensified again and again

by successive attacks of giddiness. Tinnitus is, in such instances, a prominent symptom. I am as familiar as possible with these cases, insomuch as I extract by questions these histories nearly every day of my life when I am asked about the symptom of deafness (which, by the way, never gets in the least degree better), and I find that physicians of long experience are familiar with these cases because they simulate symptoms which, proceeding from other causes, indicate danger to life. What is the lesion? We know all the theories about the semicircular canals being affected, but they again amount to no more than conjecture. No evidence that I can find either settles the character of the lesion, or even the seat of it. *Spero meliora*, but to-day I can get no nearer than to say there is a deviation from health in the origin, course, or termination of the auditory nerve. The fact of vomiting accompanying the giddiness, or succeeding to it, points rather to the origin of the nerve being the part affected, as we are led to think of the close relation of the origin of the auditory and pneumogastric nerves; but, on the other hand, how constantly is a patient the subject of giddiness from the pressure of cerumen on the tympanic membrane, such pressure being transmitted through the chain of ossicles by means of the stapes on to the labyrinth. How often, again, are patients made giddy by syringing the ear when the tympanic membrane is entire, especially when the water used is not very warm, and how much more often when the membrane is perforate. I have seen more than once a patient fall off the chair in which he was sitting whilst the ear was being syringed, and on several occasions an instantaneous vomiting without a premonitory sensation of sickness. In cases where giddiness is a prominent feature in connexion with deafness, it is worthy of notice that the very high notes are amongst the first to be lost, so that it would appear that the cochlea was one of the parts affected; and whilst on this subject I may say that this is also the case in many other diseases of the nervous apparatus of hearing. Careful experiment will show that a large number of persons in advanced life are incapable of hearing very high notes—notes which correspond, for example, in the frequency of their vibrations to the call of a partridge or the sound from a cricket. This may be readily demonstrated by experiments with one of the whistles constructed on the plan devised by Mr. Francis Galton.

More than is at present known on these matters will, I trust, by-and-by be discovered, and increasing knowledge in this direction will help much to localise the seat of lesion in nervous affections of the ear. The precise character, as well as the position, of morbid change can, however, only be satisfactorily shown when, side by side with the history, the objective and subjective symptoms, are placed post-mortem changes that can be demonstrated beyond a question. In nerve-tissue this will, from the nature of the case, be always a difficulty; but difficulties are made to be overcome. What can we say of tinnitus? Pages might be written about the symptoms, the countless conditions under which it is a prominent symptom in one ear or both. Sometimes we can produce it, account for it, remove it; at others we can do little or nothing. It may be caused by pressure on the tympanic membrane (and so on to the labyrinth), by inflammation in this membrane, inflammation accompanied by effusion in the tympanic cavity (here, again, is pressure on the labyrinth), inflammation of the external meatus or the mastoid cells, by the action of certain drugs, such as quinine or salicylic acid. The effects of quinine, for example, are well known in India to be by no means always transitory. From my own experience, I know this well. In nearly all nervous ear affections, tinnitus accompanies the deafness. If we can relieve the one we generally can the other. This is instanced in constitutional syphilis among nervous diseases; and, to go back to affections of the middle ear, the tinnitus and deafness often disappear simultaneously under treatment. People may be found to talk of functional deafness (so far as I understand the English language, all deafness is functional), but an instance of what they mean would be when a man becomes suddenly deaf with no apparent cause, and recovers as suddenly after a free purge. Here we should perhaps be not too presumptuous in saying the loss of hearing depended on passive or active congestion in the neighbourhood of the head, but more than this we certainly do not know. I have been asked to prescribe on two occasions for men in middle life who had for several weeks, when in apparently good health, suffered from symmetrical loss of hearing and tinnitus. No cause was discoverable for these symptoms, and in each case some few weeks afterwards the patient became maniacal. Possibly physicians of experience in mental disorders are accustomed to look upon these symptoms as premonitory of acute mania, or it may be that the relation of the one to the other (I mean the deafness to the mania) was a coincidence. The pathological changes on which either depended were there, though perhaps not recognisable. Certain it is that in cases where the most furious tinnitus has persisted for years, the most careful examination has been made after death by the most accurate of observers, and no deviation from health detected in the brain or any part of the apparatus of hearing.

In common with this subject, an interesting question suggests itself, as to the nature of the nervous lesion which follows certain illnesses, especially the fevers and mumps. Here, again, it must be repeated that from the cases here spoken of are excluded all those in which the middle ear has been in any way involved. The results of inflammation of the tympana come within a category distinct from these. I am now referring to the instances where the conducting apparatus is perfect, the perceptive part of the ear damaged or destroyed, where the deafness so often observable during the fever remains without alteration, although in other respects the recovery to health is complete. Caused at first, let us suppose for a moment, by the cerebral congestion incident to the fever, if the symptom of deafness subsides in the one case, why not in another? Mumps affords a still more curiously striking instance of a similar nature. I have known patients suffering from this complaint, without the least feeling of discomfort in the ear at any time, to be hearing perfectly at one hour, and within two hours afterwards to be stone-deaf in one ear, sometimes in both. Hence, when its subject is under five or six years old, mumps comes to be numbered amongst the already numerous causes of acquired deaf-mutism. What the precise character and position of the lesion may be is as yet not known.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

KING'S COLLEGE HOSPITAL.

EXCISION OF THE SHOULDER-JOINT AND REMOVAL OF NECROSED BONE FROM SCAPULA; RECOVERY.

(Under the care of Mr. HENRY SMITH.)

IT is noteworthy that while the graver constitutional symptoms in the following case were exacerbated by the first attack of erysipelas, they rapidly subsided after the second attack. In the former instance there was much local mischief, first causing, and then keeping up, the constitutional disturbance; in the latter, the diseased tissue had been removed, and the erysipelas seemed in this case, as in many others, to expedite repair.

Emily W——, aged nineteen, was admitted into Wigram ward Jan. 21st, 1876, under the care of Mr. Henry Smith, suffering from necrosis of the scapula and disease of the shoulder-joint.

Nine months before admission an abscess formed over the spine of the right scapula. The abscess discharged itself, leaving a sinus, which remained. For a long time she had suffered from pain about the right shoulder-joint, with impaired mobility.

On admission, she was a pale, strumous-looking girl. Over the spine of the right scapula there was a sinus leading down to necrosed bone. The right shoulder was enlarged and tender when pressed upon; the superficial veins were dilated. On pressing the head of the humerus

against the glenoid cavity, crepitus could be detected. Any movement of the joint produced severe pain. Painful startings occurred, usually during the night. A nutritious diet was ordered, with cod-liver oil and syrup of the iodide of iron. The arm was bandaged to the side, and counter-irritants were applied to the shoulder.

On Jan. 29th the patient was anæsthetised, and the sinus over the scapula laid open. A loose sequestrum was removed from the spine of the scapula. The arm was freely moved, and distinct crepitus could be felt in the shoulder joint.

The patient progressed favourably until Feb. 8th, when a slight rigor occurred, with a temperature of 104·4° F. This was followed by an attack of cutaneous erysipelas, which subsided in the course of seven or eight days.

From this time symptoms of hectic fever developed; the discharge from the wound over the scapula continued to be profuse. The patient suffered from nocturnal sweatings and exacerbations of temperature in the evening. At the same time no reparative action appeared to be taking place in the shoulder-joint, and the painful startings continued. Mr. Smith determined to excise the joint.

On May 6th the patient was placed under the influence of chloroform, and an incision made from the outside of the coracoid process downwards for about five inches. On opening the joint, some pus escaped, and the head of the humerus was found to be extensively diseased, the cartilage being ulcerated and the bone carious. The capsular ligament was softened, the cartilage of the glenoid cavity ulcerated in some places, and the synovial membrane thickened by pulpy degeneration. The head of the humerus was removed by sawing through the neck of the bone, and on examining the glenoid cavity a large aperture was found in it, and through this a large sequestrum of necrosed bone was felt and extracted. Very little hæmorrhage occurred. The wound was closed with sutures, and dressed with dry lint. After the operation, the patient went on favourably. The temperature fell to the normal by the eighth day after the operation, losing the evening exacerbation. The hectic symptoms diminished, and the patient improved in appearance. Passive motion was commenced about a fortnight after the operation. On June 26th the patient had an attack of cutaneous erysipelas, which spread from the wound over the back as far as the buttocks. This was treated with the ordinary remedies for erysipelas, and disappeared by July 5th. After this the wound healed rapidly, and on July 25th she was sent to a convalescent home.

When discharged, the patient had very useful movement of the right arm. The action of the deltoid muscle was defective, but she could easily carry her hand to her head. Underhand movements were free, and flexion and extension of the forearm unimpaired.

After her return from the convalescent home, the movements were freer and stronger, and the patient had a very useful arm.

LONDON HOSPITAL.

EXCISION OF THE ELBOW-JOINT FOR SYNOVIAL DISEASE WITH SUPPURATION; RECOVERY.

(Under the care of Mr. RIVINGTON.)

AN important difference existed between the nature of the disease in the preceding and in the subjoined case. In the former the osseous structures seem to have been mainly affected; in the latter the synovial membranes.

Norah A——, two years of age, was sent to Mr. Rivington by Mr. Philip Thornton, of Greenwich. The left elbow-joint was much swollen, a discharging sinus existed, and the articulation was evidently disorganised, as grating could be detected and the ligaments were loose; the phalangeal articulation of the left thumb was also disorganised and opened. The mother had deserted the child, and no previous history was obtainable. The child was admitted on the 27th of March. The joint was excised on the 6th of April by means of a single straight incision. The synovial membrane was greatly thickened, and the cartilage was in process of removal from the ends of the bones. The ulnar nerve had been dissected out by the extension of disease and by suppuration. A strong solution of chloride of zinc was applied to the exposed joint cavity. No vessel required ligature, but a piece of wet lint was inserted and the edges of the wound brought together. The arm was placed on a straight splint, and water dressing was applied. The phalangeal articulation of the thumb was excised at the same time. There was some constitutional disturbance during the first few days, the temperature rising to 104° and the child refusing food; but within a week the temperature was normal. Passive motion was employed at the end of a few weeks. On June 1st the patient was sent back to the workhouse at Greenwich, although there was still some swelling at the seat of excision, and two little ulcerated places about the size of threepenny-pieces. There was no communication with the interior of the joint. The thumb had improved. The child was not very healthy, and much required sea air to improve the process of sanguification. By permission of the guardians, at the request of Mr. Thornton, the child was sent to Herne Bay.

LIVERPOOL ROYAL INFIRMARY.

EXTRACTION OF A PENCIL-CASE FROM THE MALE BLADDER BY THE LITHOTRITE.

(Under the care of Mr. REGINALD HARRISON.)

THE following case, for the notes of which we are indebted to Mr. Holmes, dresser, is worthy of record as much for the peculiarity of the accident as for the skill subsequently shown by Mr. Harrison in extracting with a lithotrite a body so long and narrow as a pencil-case from the bladder. Such a success is perhaps the best testimony that can be offered of the use and value of the lithotrite in skilful hands for the removal of stone in the bladder.

W. O——, aged thirty-eight, a militiaman, was admitted on May 22nd, 1877. His statement was to the effect that on the previous night, when under the influence of liquor, a pencil-case had been introduced up the urethra by a prostitute in whose company, together with others, he had been. He did not, however, appear to have discovered anything amiss till the following morning, when certain uncomfortable sensations in the region of the bladder made him come to the conclusion that his pencil must be in his bladder. The surgeon of the regiment confirmed his idea by discovering the existence of a foreign body about the neck of the bladder, and sent him on to the infirmary for treatment.

On examination by Mr. Harrison, the foreign body appeared to be lying obliquely in the bladder and partly within the prostatic portion of the urethra. An attempt was first made to remove it by means of Civiale's extractor, but this failing, a lithotrite was passed. The pencil was thus carried on completely within the bladder, where it was first seized transversely by the lithotrite. In this position it was impossible to extract it; however, by gradually rotating the lithotrite towards one side, whilst at the same time the pencil was kept within the blades of the instrument, an end was reached, when the pencil was removed, point foremost, without any further difficulty or damage to the urethra. The patient was placed in bed, and a linseed poultice applied over the bladder.

During the afternoon and night he passed urine naturally, slightly tinged with blood, but on the following day he appeared in no respect the worse for what had been done. He was, however, kept in the infirmary until the 24th inst., when he went out on leave, but did not return.

In speaking of the manipulation which had been practised in order to seize the foreign body at an end, so as to effect its removal without damage to the urethra, Mr. Harrison stated that similar means had been successful in another case which had come under his notice only a very short time previously, where he had succeeded in removing from the bladder a piece of gum-elastic bougie, which had been accidentally broken in the urethra. Civiale's extractor in the instance here recorded failed, because at first the pencil was firmly impacted, and therefore could not be made to rotate. Had he not succeeded with the lithotrite, he would have again had recourse to the extractor, which would then have probably been successful, inasmuch as, the pencil being now fairly within the bladder, rotation would be permitted. The difficulty, in removing foreign bodies from the bladder, such as pieces of bougie, pencils, &c., was

due to their being generally seized by forceps or the lithotrite transversely. This Civiale endeavoured to remedy by the use of an instrument something like a lithotrite, the blades of which are so arranged that on seizing a body,

such as a piece of bougie, it is rotated, and its long axis made to correspond with that of the extractor. The instrument, which is not very generally known, is figured in Reliquet's "Traité des Opérations des Voies Urinaires," p. 558.

The woodcut represents the actual size of the pencil-case which was removed.

QUEEN'S HOSPITAL, BIRMINGHAM.

NON-PENETRATING GUNSHOT WOUND OF THE ABDOMEN; RECOVERY.

(Under the care of Mr. J. F. WEST.)

FOR the notes of the following case we are indebted to Mr. Wilkins, house-surgeon.

Arthur R——, aged eighteen, single, a clerk, was admitted on December 2nd, 1876, suffering from a self-inflicted pistol-shot wound on the left side of the abdomen, opposite the cartilage of the eighth rib, four inches below and in a line with the left nipple. The patient, who was in a desponding state of mind from lack of employment, shot himself in the afternoon, having first stripped himself of his clothes, with the exception of his trousers, pressing the muzzle of the pistol close to the skin. He stated that he intended to shoot himself through the heart. The pistol was a smooth-bore, and the bullet about the size of a large currant. He affirmed that he felt no pain at the time of injury nor subsequently. The aperture of entrance was much contused, and the skin around charred for about two inches. On examination with a probe the bullet was found to have traversed outside the thorax and abdominal cavity, in a slanting direction from right to left, and a little downwards for about five inches. The bullet, which had been extracted by a surgeon who was sent for, was found lying immediately under the skin. No rib was felt to be bare, nor were there any fractured. There was a small amount of shock. Pulse 110; respiration 40. Ordered linseed-meal poultices to side, and to take ten drops of tincture of opium every four hours.

Next day the pulse was 112; respiration 32; temperature 101°. The patient was in a desponding state, and had not slept during the night, but had had no pain.

Dec. 5th.—Pulse 108; respiration 28; temperature 101·3°. The patient was better. Had slept well, and was free from pain. The contused part around the aperture of entrance was beginning to slough. A drainage-tube was passed right through it. Ordered charcoal poultices; also five grains of carbonate of ammonia and fifteen drops of tincture of opium in peppermint water, three times a day.

20th.—Pulse 112; respiration 32; temperature 102°. The patient complained of shortness of breath and pain about the wound. On examination with the probe there was some bagging found midway between the two openings and a little below their level; an opening was made here, and a piece of drainage-tube passed through. Still continuing poultices.

From this time the patient gradually improved. The drainage-tubes were removed on Jan. 11th, and the wounds were syringed with sulphate of copper lotion and dressed with the same. He began to get up in the afternoons.

On Jan. 20th he was discharged from hospital, cured.

Remarks.—It is very rarely that we meet with a more determined attempt at suicide than in this case, the pistol being held close to the skin of that part of the body where the heart was supposed to lodge. That the bullet did not penetrate the trunk is probably due to its having been spherical in shape, fired from a smooth-bore pistol, and to its striking against the eighth rib almost immediately after it entered the body, and by this means being directed outwards along the upper border of that rib. No untoward symptoms, such as might have been anticipated from the close proximity of the pericardium, pleura, and peritoneum, ever came on, and although a considerable portion of the integument sloughed away owing to the direct action of the gunpowder, the young man made a rapid recovery. Had the ball been conical and the pistol rifled, the result would probably have been a gunshot-wound completely traversing the body. The case shows how easily a spherical ball, striking against a hard substance such as a rib, even when issuing direct from the pistol's mouth, may be deflected or altered in its course.

Reviews and Notices of Books.

Lectures on Diseases of the Nervous System. Delivered at La Salpétrière. By J. M. CHARCOT. Translated by George Sigerson, M.D., M.Ch. London: The New Sydenham Society. 1877.

THESE lectures of M. Charcot are too well known in the original to call for any special criticism here. They have, indeed, obtained a European reputation, and it has long been felt that it would be a great gain to our literature to have them rendered into English. The present translation, which we owe to the Sydenham Society, is from the latest edition of the French work, and we would remind the Society that a second volume of these lectures has also been recently completed, so that we may hope by next year to be able to chronicle its translation also. We strongly advise all those of our readers who may not yet have made themselves acquainted with these lectures to lose no time in so doing; and for their benefit we may here briefly indicate the subjects which are discussed in them. The first four lectures deal with the important subject of Disorders of Nutrition consequent upon Lesions of the Brain and Spinal Cord; they abound in interesting facts. Then comes a lecture on Paralysis Agitans, which is followed by three lectures on a disease, possibly in former times confounded with that affection—viz., Disseminated Sclerosis. We believe that these lectures were almost, if not actually, the first in which the clinical features of this disease were fully described; but both Carswell and Cruveilhier had long before given faithful drawings of its anatomical characters. In M. Charcot's pages we have a well-nigh exhaustive account of disseminated sclerosis, to which later writers have added but little. The remaining lectures are devoted to the consideration of those remarkable hysterical affections which are so largely represented at La Salpétrière—hysterical ischuria, hysterical hemianæsthesia, ovarian hyperæsthesia, hysterical contractures, and hystero-epilepsy, each in turn receiving the most ample illustration. After perusing these chapters, the English reader will be willing to allow that France must bear the palm for cases of aggravated hysteria. Some of the La Salpétrière cases certainly have no counterparts in England.

The translator, Dr. Sigerson, a former pupil of the author, has succeeded admirably in his rendering of the elegant literary style of M. Charcot; and had the Society which issues the volume only been enabled to reproduce the plates which are met with in the original work, it would have enhanced the value of a book which, without doubt, is one of the most valuable that has been issued by this Society since their translation of Trousseau.

American Addresses, with a Lecture on the Study of Biology. By THOMAS H. HUXLEY. Pp. 164. London: Macmillan. 1877.

WE are glad to see these excellent and carefully prepared addresses in a collected form. They embrace three lectures on Evolution, delivered in New York in September of last year; an address on the occasion of the opening of the

Hopkins University at Baltimore in the same month; and a lecture on the Study of Biology in connexion with the Loan Collection of Scientific Apparatus, delivered at the South Kensington Museum at the close of 1876. In the lectures on Evolution, Mr. Huxley considers the several hypotheses that have been at various times suggested to account for the existing order of things, and shows how the doctrine of evolution is that which is most in accordance with our present knowledge of the geological record, and that whilst there is much other evidence which is favourable to it, and some that is neutral or indifferent, there is none that is absolutely opposed, the Biblical account having received different interpretations at the hands of different scholars. He discusses the connecting links between reptiles and birds, two extremely dissimilar vertebrate types, and shows that in the extinct Ornithoscelidæ, such as Compsognathus, we meet with forms that, if not exactly intermediate between reptiles and birds, yet remove every difficulty in the way of understanding what the actual steps of the process of evolution of birds from reptiles may have been. He instances the pedigree of the horse, through the Pliohippus and Hipparion of the Pliocene, the Miohippus of the Miocene, and the Mesohippus and Orohippus of the Eocene, in which last animal the forefoot presented four digits, nearly all of equal size, and the hind-foot three, as being strongly in favour of the doctrine of evolution. In the last essay, speaking of the museum of the future, Mr. Huxley observes that we have all walked through a quarter of a mile of animals, more or less well stuffed, with their long names written out underneath them, and the upshot of it all is that we leave that splendid pile with sore feet, a bad headache, and a general idea that the animal kingdom is "a mighty maze without a plan." Instead of this he suggests that, for the scientific man, the parts alone that he requires—skin, skeleton, and the like—should be so placed as to be conveniently studied; whilst, for the general public, typical forms should be selected, and so arranged as to tell the spectator in legible characters what they are and what they mean. Mr. Huxley is hopeful enough to think that elementary biology will come to be generally taught in schools. May it be so!

Sanitary Engineering. A Series of Lectures given before the School of Military Engineering at Chatham, 1876. By J. BAILEY DENTON, F.G.S., M. Inst. C.E. Large 8vo, pp. 429. London: Spon. 1877.

THIS work, its author states, "especially aims at bringing the work of the engineer into closer alliance with medical science," and it is dedicated to the memory of Dr. Parkes. The highest compliment that we can pay to the work, and the best testimony we can give to the success with which the author has achieved his aim, is this: that the work will form a worthy and, we will venture to say, almost indispensable, companion volume to the "Manual of Practical Hygiene." It stands quite alone among engineering works in apprehending the standpoint from which the medical man, and particularly the medical officer of health, has to view sanitary questions, and for this reason it shows a clearer conception of the engineer's functions in dealing with sanitary matters and in showing how these may be best fulfilled. Not less does it manifest a just appreciation of the chemist's position in such matters to the medical man on the one hand and to the engineer on the other, while at the same time it exhibits great regard to the position of the "practical man," so to speak, both in his individual and in his municipal relations. Add that the work contains the results of an exceptional experience in dealing with the sanitary engineering requirements of houses and communities in the minutest as well as the most comprehensive details, that it is written with a freedom from contentiousness as refreshing as surprising in the present day, and that throughout it is characterised by a far-seeing thoughtfulness, and we have said sufficient to indicate the important addition it makes to sanitary literature. Indeed, the great necessity for such a work had not, perhaps, been fully recognised until this appeared. To medical men engaged in sanitary work, and especially to medical officers of health, Mr. Bailey Denton's book will prove of peculiar use, as showing in what manner and to what extent the sanitary engineer can aid him in the performance of his duties, also in giving him a clear apprehension of the principles which govern the engineer in carrying out sanitary functions. To the engineers and "surveyors" of local authorities the volume will prove as invaluable as a text-book as the "Manual of Practical Hygiene" has proved to medical officers of health. And to all persons concerned or interested in sanitary processes it cannot fail to prove of the greatest utility as a work of reference.

Although the work is described as "a series of lectures," its arrangement is that of a text-book; for it is broken up into divisions and sections, each section with a sub-heading, after the manner of a systematic treatise. It has, moreover, an excellent index; and thus it takes the form of a well-arranged text-book. The matter of the volume is arranged in five divisions, treating in succession of Air, Water, the Dwelling, the Town and Village, and the Disposal of Sewage. From each of these divisions illustrations of Mr. Bailey Denton's method and manner might be readily quoted, but we shall limit our observations to three points only—relating to water-supply, to the sanitary regulation of villages and small towns, and to the disposal of sewage.

Mr. Bailey Denton, in concluding his observations on water-supply, justly observes that "the country requires instructions how to develop local capabilities so as not to rest upon State interposition." Although this observation refers to a suggested Government inquiry on the subject, it touches one of the points which give Mr. Bailey Denton's work its peculiar utility; for there is no part of it which will prove more valuable to local authorities and their officers, particularly the local authorities of small communities, than that which discusses the mode of developing local water-supplies. As he justly remarks, "the chemist's view of the matter has been exhausted," but not that of the engineer; and we would add that the medical view has barely been entered upon.

The village and the small town have been and still largely are stumbling blocks to sanitary workers. From this book we may learn how needlessly so.

The discussion of the question of sewage-disposal is throughout masterly, equally removed from the crudeness of the late report of the Committee of the Local Government Board and from the exaggerated statements of too many writers on the subject. It is, above all, eminently practical, and furnishes a most welcome, and, we believe, most trustworthy guide to local authorities in dealing with the difficulties attached to the question.

Rich as this work is in detail, Mr. Bailey Denton, in concluding it, modestly observes "that there is really so much to do, the sanitary engineer may be said to stand on the threshold of his vocation." We could not give a better illustration of the excellent spirit in which the work is written. It is admirably and copiously illustrated, and in this respect contrasts very favourably with the greater number of the illustrations found in the "Manual of Practical Hygiene."

A Handbook to the Public Picture Galleries of Europe. With a Brief Sketch of the History of the various Schools of Painting from the Thirteenth Century to the Eighteenth inclusive. By KATE THOMPSON. London: Macmillan and Co. 1877.

IN a very modest preface, Miss Thompson tells us that this little book is the outcome of visits to numerous picture galleries at home and abroad during the last five years, in company with her father, Sir Henry Thompson. If it had no other merits, the work would be of value as showing how much artistic taste may be cultivated in the brief holidays of a busy member of our profession. But the book has far higher and independent merits. In a brief compass are contained accounts, clearly and judiciously written, of the rise and progress of all the principal schools of painting of various countries, a very complete list of all the chief works of the great masters in the public galleries of continental cities, and a historical list of all the great painters to the end of the last century. To those who are interested in art, or who propose to visit in their holiday rambles any of the great collections on the continent, we very cordially recommend the work. They cannot fail to be instructed by it, and to take a much more intelligent interest in what they see. We congratulate Miss Thompson on the production of a work so much needed, and in every way so entitled to the name of a "handbook."

A Handbook of Medical and Surgical Electricity. By HERBERT TIBBITS, M.D., F.R.C.P.E., &c. Second Edition, revised and enlarged. Pp. 254. London: J. & A. Churchill.

WE gladly welcome a second and much improved edition of this valuable and thoroughly practical work. We have already had occasion to review very favourably the first edition. The present is considerably enlarged by an addition of nearly 100 pages, thirty-one new illustrations have been added, and some of the older ones have been redrawn. Perhaps the most valuable of the new figures are those of Ziemssen's motor points, eighteen in number, which, we are convinced, will be found of great use as guides to the inexperienced in the application of electricity. The work still retains its thoroughly practical character; there is an avoidance of theory and discussion throughout, and, for the purpose for which it is designed, this is, no doubt, an advantage. The sections on electricity in medicine and surgery have been a good deal extended. As a guide to the practitioner in the choice of instruments, their method of application, and the general objects to be kept in view in the use of electricity in medicine, we can heartily recommend the work.

New Inventions.

A POCKET INSULATED SURFACE THERMOMETER.

NUMEROUS attempts have from time to time been made to provide a simple, portable, and trustworthy thermometer for taking the temperature of any portion of the surface of the body, but they have not hitherto been attended with success. Dr. Mortimer Granville seems, however, to have overcome the chief difficulties, and has designed an instrument which accurately records the temperature of the skin, and consequently furnishes ready means of ascertaining the comparative temperature of different portions of the surface of the body.

The principle of the thermometer is that it takes the temperature of a circumscribed area of surface, which is protected for the time being from the general atmosphere of the apartment in which the patient lies. The instrument consists of a German silver cup which fits into a socket or case of ivory; a flat coil of tube containing the mercury forms the bulb. This occupies a considerable portion of the orifice of the cup. From the centre of the bulb the tube of the thermometer is carried, through an aperture in the cup and socket fitted with an india-rubber washer, to the outside of the ivory case, and there curved horizontally to form the scale, which is marked from 70 to 115 degrees Fahr., each degree being divided into fifths. Some of the instruments are fitted with scales of smaller compass and graduated to tenths of a degree. When the instrument is applied to any portion of the surface like a cupping-glass, the flat coil-bulb rests on the skin, and the cavity contains an atmosphere which in a few minutes is raised to the actual temperature; the German silver cup, acting as a reservoir of the heat given off by the skin, steadies the column of mercury at the register. Scarcely any pressure should be made in applying the thermometer to the surface, as the strain falls on the glass stem of the bulb, and this being entirely unsupported, to secure perfect insulation, is necessarily fragile. An ebonite cover protects the horizontal tube on the top of the ivory, and the scale is exposed to view in a groove on the surface, as will be seen in the figure accompanying this notice, from which the general construction of the instrument will be readily understood. The woodcut shows the side view and the under surface, with the bulb of the thermometer, in two diagrams, actual size. The whole fits into a convenient case, which includes a lens for reading the register. The bulk of the entire apparatus is small.

Many experiments have satisfied us that the instrument adequately answers the purposes for which it is intended, and Dr. Sydney Ringer, who has tested it at University College Hospital, reports equally favourably of its performance. It must, however, be premised that a source of fallacy is apt to vitiate all attempts to take surface temperature. When the body is stripped the skin cools rapidly, and regains its proper degree of heat but slowly, while both the decrease and the increase of temperature take place at variable and unequal rates, not only for any given area, but for different parts of the body. Dr. Ringer reports that when a patient whose temperature was normal was sent to bed the skin was rapidly cooled to 94° F., and that an hour and a half elapsed before it recovered its lost heat.

At the commencement of this observation the rectal temperature was taken and found to be 98·6° F.

"The surface thermometer was then placed on a level with, just to the right of, the ensiform cartilage—that is, over the liver. At first the surface thermometer recorded only 94° Fahr., but the mercury gradually rose, and in an hour and a half it recorded 97·5°. We next took the temperature an inch and a half to the left of the umbilicus; in five minutes the surface thermometer recorded 97·5°. We then applied it over the skin two inches above the middle of the left Poupart's ligament, and in five minutes it recorded a temperature of 97·5°. We then applied it an inch inside and on a level with the left nipple, and in five minutes it recorded 97·5°. We then placed it over the lower ribs

covering the liver, in the nipple line, and it recorded 98°. We then took the rectal temperature a second time at the conclusion of our observations, which had lasted nearly two hours, and found it 98·8°. Observations on fever patients yielded equally satisfactory results."

The instrument is made by J. H. Steward (406, Strand), who has evidently spared no pains in its manufacture, and has been especially careful to secure accuracy in the marking of the degrees.

THE WAR.

A SHORT time ago we referred briefly to the reported admirable medico-sanitary arrangements of the Roumanian army. The *Journal de Bucarest* gives certain details of these arrangements, which would indicate that the Roumanian Government is apparently aiming at making the medico-sanitary organisation of its troops a model for other nations. The Roumanian army, it would appear, now numbers 60,000 men. Each regiment has attached to it a medical officer of the first class, and three medical officers of battalions, sixteen soldiers detached for sick-carriers, a two-wheeled ambulance cart, a sufficiency of Percy litters, and medical and surgical stores sufficient for a flying hospital of twenty beds. Each brigade has a chief medical officer who can combine at will the regimental arrangements so as to form a brigade ambulance. Each native division possesses a complete special ambulance, consisting of six large waggons for the transport of the wounded, ten smaller two-wheeled waggons (Liposky's pattern), six large baggage-carts for the carriage of all the materials necessary for the ambulance, one hundred sick-carriers, four ambulance-tents, constructed after a new model, and each capable of containing six sick or wounded. Special beds are not provided for the tents, litters being used for beds, supported on feet improvised for the moment. The staff of the ambulances form quite an independent corps, and the division ambulance can be broken up in sections in aid of the brigade ambulance, if needed. To each of the several kinds of ambulance (regimental, brigade, divisional) is attached a sufficiency of baggage mules, with a service for water-carriage. To each of the divisional ambulances, moreover, is attached a section of the ambulance of the Red Cross, placed under the authority of the military medical officers, and working in complete accord with the military ambulance. Ambulances of reserve are further provided for each *corps d'armée*, formed in the main upon the plan, but double the strength, of the divisional ambulance. These last-mentioned *corps d'armée* ambulances, however, have special arrangements for the erection of temporary hospitals. Two sorts of temporary hospitals are made use of—namely, tent hospitals and hut hospitals. The tents are used for the first line, the huts for the second line, the latter being built in the vicinage (the gardens, indeed) surrounding the civil hospitals of the districts. Here advantage is taken of the local medical men for attendance upon the sick and wounded, and of the barbers, who, it appears, are very numerous in Roumania, still practise there minor surgery, and are especially qualified to act as dressers. Twelve temporary hospitals have been established for the first *corps d'armée*, and one hospital of reserve. The monastery of Bistritza has been converted into a depôt for one thousand convalescents. Six divisional ambulances and two *corps d'armée* ambulances have been organised, as well as a regular service of waggons and railway trains for distributing the sick and wounded. Lastly, a statistical department has been established to keep accurate record of the admissions, discharges, and results of treatment in the ambulances.

It matters not, however, that the preliminary preparations for a campaign may display the most thoughtful regard for the welfare of the sick and wounded, for no organisation can meet at the moment the difficulty of dealing with the mass of wounded which follows in a few hours upon a severe engagement. Thoroughly well-considered as the medico-sanitary arrangements of the Russian army appear to have been, they were wholly unequal for the moment to meet the necessity of transport of the wounded at the battle of Plevna. *The Times* correspondent gives a terrible picture of the obviously unavoidable misery to which the great numbers of wounded from that action were subjected from insufficient and imperfect transport in their carriage to the rear. The latest official Russian return of killed and wounded at the theatre of war in Europe refers to the period July 22nd—27th, and shows a loss during the five days of 2178. The total loss in killed and wounded from the beginning of the war to the 27th July is stated to have been 8865.

The Russian Red-Cross Society has published an account of its receipts and expenditure for the six months ending June, 1877. The receipts, it appears, amounted to 2,243,823 roubles, and the expenditure to 1,236,978. Among the contributors to the Society are the following entries:—The Emperor and Empress, 30,000 roubles; the members of the Imperial family, 25,500 roubles; the Duke of Edinburgh, 945 roubles. Among the expenditure appears 219,949 roubles for the organisation of sanitary trains, 91,197 roubles for the maintenance of the sanitary staff, 25,969 roubles for the organisation of ambulances, and 13,310 roubles for medicaments.

Five of the Russian sanitary trains have been actually engaged in the transport of wounded from the seat of war into the interior of the Empire, and the bare statement of the service they have done to the time of the report gives the clearest indication of the plan of distributing the wounded, which is now in process of being carried out. The Empress's train (No. 1) conveyed 24 wounded to Kiew, and 73 to Moscow; the Grand Duchess Alexandra Petrovna's train (No. 2) conveyed 19 to the hospital of Guerbovets, 20 to Kiprianovsk, and 43 to Kischinew; the Grand Duchess Cesarevna's train (No. 4) conveyed 3 to Kischinew, and 107 to Kiew; the Duchess of Edinburgh's train (No. 4) conveyed 114 to Kharkow, and 120 to Moscow; the Odessa train conveyed 56 to Kiprianovsk, and 140 to Moscow.

Colonel Loyd-Lindsay reports that the stores sent out by the National Aid Society have reached Turkey, and that Mr. Young, who is in charge, is, with the assistance of the Red Crescent Society, rapidly turning them to good account, both in Europe and in Asia. Dr. Arnaud Leslie and Dr. Meyrick had been despatched to the Turkish troops in the Balkans; and *The Times* correspondent at the headquarters of the Turkish army, then at Yeni Saghra, and under date 23rd July, announces their arrival there, with a waggon-load of welcome and valuable stores. An effort is being made to replenish Dr. Cruikshank's stores at Rustchuk; and Mr. Hope and Mr. Ralph Leslie are on their way with help for the sick and wounded in Erzeroum.

Lady Strangford has published an account of the fund she collected for the Bulgarians, which, it appears, amounted to the large sum of £28,892. Of this sum, £1234 15s. was expended in the erection of wooden huts, and £2588 4s. 6d. for hospitals, doctors, nurses, and medicines. Her ladyship has left England for Turkey to give aid to the sick and wounded in the Turkish army.

THE SMALL-POX EPIDEMIC.

THE deaths from small-pox in England and Wales, which were 1943 in the first quarter of this year, declined to 1416 during the three months ending June last. Of these, 904 occurred in London and its suburban districts, 315 in Lancashire, 86 in Cheshire, and but 111 in all other parts of England and Wales.

Recent weekly returns of the Registrar-General show that the fatality from small-pox in our largest towns still further declined during July. The last published return for the week ending 4th instant reported but 33 deaths from small-pox in the twenty largest English towns; of these, 22 occurred in London, 5 in Liverpool, 3 in Brighton, 2 in Manchester, and 1 in Birmingham. The three fatal cases in Brighton were recorded in the infectious wards of the Union Workhouse.

The number of small-pox patients in the Metropolitan Asylum Hospitals, which in the ten preceding weeks had steadily declined from 964 to 530, did not exceed 445 on 4th instant. The admissions during the week ending on that day were 65; in the four previous weeks the numbers had declined from 146 to 75. In the Highgate Small-pox Hospital there were 41 patients on the 4th, against 31 at the end of the previous week.

THE LANCET.

LONDON: SATURDAY, AUGUST 11, 1877.

IT is not at all surprising that an article on so important a subject as "Hospital Mortality" should call forth an expression of opinion from many different sources. The letters which were addressed to us last week serve rather to confirm us in the opinion we had expressed as to the impossibility of getting any valuable results from the comparison of percentage mortality in general hospitals. Let us consider for a moment how many difficulties oppose themselves to the forming of percentage averages which shall be of any service in determining the salubrity or insalubrity of any institution even in such a matter as amputation of the limbs.

The first thing to be taken into account are the probable "odds" against the patient in any particular case. Without some knowledge of these, it is impossible to determine whether death, should it supervene, is attributable to some vice inherent in the patient or existing in his surroundings—in the surgeon, the nurses, or the hospital. It is necessary not only to take into account the age, sex, occupation, and previous habits of the patient, but we must also know the condition of all the internal organs, the amount of blood lost previous to operation, the general constitutional vigour, the degree of shock, and the nature of the injury. The skill of the surgeon is, we hope, of some importance in calculating these odds, but it would be libellous to allude to it. The attitude of the surgeon towards the case is also of prime importance. While one would say, "The poor fellow must die. Why swell our amputation-mortality in a useless manner?" another might say, "Amputation is his only chance; let us do it." If the importance of percentage averages is too hardly pressed, we fear it might act very much to the detriment of patients needing amputation. We can conceive nothing more prejudicial to true progress than the hasty adoption of theories based upon insecure data.

Mr. LAWSON TAIT, for instance, says, in his recent work: "If the death-rate of St. Thomas's were as low as that of St. Bartholomew's, 220 valuable lives would be saved every year." Surely there should be some very strong ground for presuming that the extra deaths in St. Thomas's are avoidable, otherwise the correct method of stating the case should be: "If the death-rate of St. Thomas's were as low as that of St. Bartholomew's, sundry patients of the former hospital would have to die elsewhere."

On looking at the figures which Mr. TAIT gives as representing the condition of affairs at St. Bartholomew's, and contrasting them with those of Dr. STEELE and of the published reports issued by St. Bartholomew's itself, we are at once driven to suspect that there must be a grave error somewhere. Thus, for the years 1870–75, Mr. TAIT says that the total number of beds at St. Bartholomew's was 710; while Dr. STEELE, for the years 1872–75, puts them at 650. The average yearly number of patients is stated by Mr. TAIT to be 3337, while Dr. STEELE asserts that they are 5548. Finally, Mr. TAIT puts the average percentage mortality of St. Bartholomew's at 5·12, and Dr. STEELE at 9·3. Thus, when we compare the figures of these two statisticians, we find a discrepancy amounting to nearly 10 per cent. on the beds, 40 per cent. on the patients, and 4·18 per cent. on the mortality. It is of very great importance to know which is right, and we may hope that someone acquainted with the details of the work of St. Bartholomew's will give us the much-needed information. We can hardly fancy that Mr. TAIT's figures are correct, for, on turning to some of the reports, we find the number of cases under treatment in 1870–72–73–74 to have varied between 6342 and 5594. Dr. GREENFIELD, in a letter addressed to us last week, showed that in 1873 the percentage mortality of St. Thomas's was 9·7 for the surgical wards, and 14 for the medical wards; the total cases under treatment having been 2885, and the total mortality 11·3 per cent. During the same year, at St. Bartholomew's, the medical mortality was 14·6 per cent., while the surgical was the lowest on record—viz., 3·9 per cent. The total mortality was 8·3 per cent. Nothing can show better than these numbers the absurdity of classing surgical and medical cases in one group for the purpose of making any valuable deductions from the mortality percentages. Perhaps some clue to the very small surgical mortality of St. Bartholomew's for the year 1873 is found in the fact that among the 3520 surgical cases there were only six amputations for injury.

We may be allowed to return to the question of "activity," as evinced by different hospitals. Now, by activity we mean the number of patients, divided by the total number of beds, the quotient giving the number of different patients who have occupied each bed in the course of a year. Thus, taking Dr. STEELE's numbers for 1872–75, we find that the activity of St. Bartholomew's was $\frac{5548}{650}$, or 8·5. If we take Mr. TAIT's figures for 1870–75, we find the activity to be $\frac{3337}{710}$, or 4·7, a number which we have good reason to doubt. During the same period the activity of University College was $\frac{1756}{154} = 11·4$, if we use STEELE's figures, or $\frac{1703}{150} = 11·3$, if we use Mr. TAIT's numbers. Here again we must credit Dr. STEELE with the greater accuracy, because the number of beds at University College is given in the official report as 154. We hold the "activity" of an institution to be a most important factor in determining its salubrity, for it may be assumed to show the degree in which it is used by acute cases, and if much used by acute cases, as is presumably the fact at small hospitals with large schools, we may expect the mortality to be high, and that without the least blame attaching to the institution. The practical meaning of activity is well shown by alluding once more to the year 1873, in which there were at University College thirty major amputations, of which seventeen were for injury, while at St. Bartholomew's, with nearly four times the number of surgical patients, there were only thirty-one major amputations, of which only six were for injury. If this is to be taken as a sample of the different activities of two hospitals, it is no matter for

wonder that the percentage mortality at the smaller and more active is the higher of the two. Unless it can be shown that a high percentage mortality is due to preventable deaths, it means nothing, and indeed it may possibly be the real and true gauge of the value of the service rendered by the institution to the State. Although, we fear, there is no room to doubt that many hospitals, owing to faulty construction, are, as it were, "born" to a high mortality, and others "achieve" it by mismanagement, it must in all fairness be remembered that some of the smaller and more active institutions have their mortality, so to speak, "thrust upon them."

Arguing from figures of very doubtful accuracy, Mr. TAIT upholds St. Bartholomew's as an institution in every way worthy of imitation; and so we dare say it is, but not for the reasons given. The low death-rate (5·12?) is, we are told, due to the fact that the population of the hospital has been reduced 40 per cent. (?), and that 57·5 per cent. (?) of the beds are always empty.[1] The patients in the hospital thus come to enjoy the cubic space allotted to the empty beds, and therefore it is, we suppose, that Mr. TAIT, enamoured by these doubtful figures, recommends[2] "that under no circumstances whatever should there be more than one bed to every 150 square feet of ward floor, and that every bed should have a minimum cubic space of 3000 feet." Let us look calmly at what this means in practice. The regulation width of a ward is 24 ft., so that to give every patient his proper amount of floor space, the beds would have to be rather more than 12 ft. apart, and the ward to be 20 ft. high. A height of 20 ft., however, is 8 ft. more than is admissible, 12 ft. being now recognised as the greatest height which is required. Now, to give every patient his cubic space of 3000 ft. in a ward 24 ft. wide, and 12 ft. high, with two rows of beds, the beds would have to be 18 ft. apart (plus 3 ft. for the bed), so that the wards, to accommodate the 2532 beds of our four large hospitals would, if placed end to end, occupy five miles of space, and would stretch from the Marble Arch towards the far extremity of the Mile-end-road.

If this is to be the remedy for our hospital mortality, we agree with Mr. TAIT that it is high time for the question "to be subjected to the scrutiny of a scientific commission."

CESSATION from labour, whether of body or brain, is only part, and not the most important element, of the annual holiday. Under conditions of life less monotonous and exhausting than those extant, special seasons of release and change may have been unnecessary. Something also of the compelling sense of need for respite now experienced by busy men of all classes may be due to the custom of periodic escape which has sprung into existence since the institution of railways, just as the penny postal system has doubtless created as many necessities and anxieties as it relieves. It is, however, a fact that, taking things as we find them, a vacation of some length once a year is a want which all of us feel, and most are willing to make considerable sacrifices to supply. Of this "outing," we repeat, mere respite from toil is by no means the chief, or even a prominent feature. Many persons convert fully as much energy into force during their holiday as, in equal time, at any other period of the year; but the work done differs in kind from that performed in the routine of ordinary duty or custom, and relief is obtained, though not by idleness.

The first condition of relief is rest, and the organism—physico-mental—is so constituted that one part of the whole may be rested independently of the others. This, in fact, is the way natural repose is commonly taken, and it is a remarkable fact that if any one portion of the system is especially active and, so to say, charged with a large amount of energy, rest cannot be secured unless some other part of the organism is so worked as to utilise the force this particular portion commonly consumes, by increased activity in some new direction. The individual who is accustomed to hard labour with muscle grows impatient after the first few hours of repose, unless his mind can be occupied, whilst the habitual brain-worker seeks rest, and commonly finds it, in physical exercise—for example, striding the moors, plodding over ploughed fields, climbing mountains, or in the engrossing and laborious amusement of the chase. Failure to recognise this condition of rest—the faculties and force-consumers, relieving each other in detachments—is the fruitful cause of disappointment, particularly when rest is prescribed as a remedy for special forms of exhaustion. The advice to "get away," to "travel," to seek "repose and recreation," unless amplified by precise directions adapting the remedy to the peculiar needs of the individual, is about on a par with the sage counsel to "take some medicine," without saying what. No real rest can be obtained for the organism as a whole, or any of its parts, unless Nature by instinct or a special craving amplifies the prescription. The need for specific direction is the greater because, without suggestion, it would seem sufficient to secure simple relief from accustomed exertion.

In the case of a healthy person this will, indeed, probably suffice—the spare force will find a new avenue for its escape. The invalid or weakly subject, however, is not so well provided: the energy wont to be converted into force and used in brain-work will, if not diverted, produce worry; the material that exhausted itself in muscular activity will fret the physical organism and give rise to functional disturbance of stomach or liver. It is unsafe to lay any organ or part of the system aside suddenly without providing for the use of its force in some other quarter, and the peril is especially great in the case of an individual who urgently needs rest in one respect, but is too weakly to take compensatory exercise in some other. Nor are all the departments of activity capable of relieving each other. This opens up a question to which the attention of the practical physician needs to be more specifically directed. The principle that rest can be secured only by *relief*, some other function absorbing the disused energy, underlies the *rationale* of healthful recreation, and should govern its pursuit.

To re-create, in its medical and natural sense, is to repair in structure, and renew in strength. The organism deteriorates in use as in disuse, though the impairment from continued employment is not, if the normal functions have been maintained in their integrity, so exhausting as the defect that results from non-development. The recuperative faculty is an integral part of function as a whole, and the

[1] Hospital Mortality, p. 45. [2] Ibid., p. 102.

organ that performs its proper service in the economy most efficiently is, *ceteris paribus*, in the best condition to sustain the wear and tear of use. "Overwork" can only exist when wear exceeds repair. In health this seldom happens, and when it does occur entire disuse of the organ is not the remedy. The exhaustion that ensues from excessive activity in a particular part of the organism is analogous to the paralysis that occasionally supervenes upon the inordinate and unduly prolonged use of special muscles. Something more than inaction is required to restore the normal vitality and tone of the tissue in which consumption has outrun supply and repair. The first condition of such recreation as the mind and body require is rest for the overworked organs, and this, as we have said, is to be sought in cessation from the accustomed toil, with diversion of energy in some new direction. Practically this compensatory relief must, in the case of the mind, be secured by awakening a new interest. It follows that the inclination must be consulted in the choice of a relief, and, unless it can be stimulated to participate in some pursuit, the full benefits of change are not likely to accrue to any removal.

It is of the highest moment that this should be borne in mind, because it often happens that invalids are carried from place to place listlessly, and health is not improved because interest is not awakened. The mere yearning for rest without active purpose is bad; it betokens undue exhaustion, and generally a worried and enfeebled mind. The longing of health is for some new form of occupation which promises pleasure, and may therefore be expected to give relief. This is why advantage so often results from change to what is called the "native air." The benefit derived is due to the fact that the mind is lifted out of the groove in which it has suffered the consequences of friction, and reverts to a previous state, with the absorbing, though perhaps unperceived, interest of renewing old associations. Even in the case of children this happens, and with marked physical results. In adult life thought is generally more easily turned into new channels than old; later on the mind derives pleasure from revisiting the half-forgotten, though cherished, scenes of youth and adolescence. The same principle governs the beneficial action of change, let it be worked out as it may. Mere idleness will not secure relief, or simple cessation from labour give rest. Recreation, in any real sense, can only be effected by a change of scene and mode of life which, while it provides an escape from previous surroundings — the causes of worry and weariness,—opens up some new interest whereby energy is directed into a fresh channel, and the inner force of vitality fed and stimulated by some new device.

A FRESH series of important observations on the relation of bacteria to the charbon of cattle by MM. PASTEUR and JOUBERT were communicated, on the 17th ult., to the Académie de Médecine. M. PASTEUR has, as we lately mentioned, arrived at the conclusion that the bacteria constitute the essential element of the charbon, so that he asserts that the affection may be termed "bacteria disease," just as trichinosis is the trichina disease, and the itch is the disease or the acarus scabiei. He details at length the experiments which have led to this conclusion, which consisted essentially in the propagation of the bacteria of the blood in suitable liquids, such as pure and nearly neutral urine. Every precaution was taken to prevent the accidental introduction of germs from without; and for this purpose M. PASTEUR used an ingenious apparatus, which allowed the liquid containing the bacteria, and that which it was proposed to inoculate, to be brought together for a moment. When the operation had been repeated a great number of times, with successive liquids, the bacteria alone remained of the elements introduced from the affected blood; for, he argues, nothing else could remain of the inoculating blood, except something which could multiply itself, as the bacteria; after many successive dilutions all the particles originally introduced would have disappeared. But what besides bacteria can have thus multiplied themselves, and can constitute the morbid virus? Corpuscles, such as M. CHAUVEAU has described in vaccinia? Were this the case the liquid would be opalescent, in consequence of the multiplication of the corpuscles. On the contrary, the liquid remains perfectly transparent. Against the theory that it may be a soluble substance, a sort of diastase, is the fact that if a liquid containing the bacteria is filtered it is rendered innocuous, while the bacteria which remain upon the filter rapidly kill animals into which they are inoculated. However numerous are the successive transfers of bacteria from one liquid to another, they are not less effective in producing the disease. The conclusions of M. PAUL BERT are, however, opposed to these observations. He maintains that the bacteria are not the active elements of the malignant blood, because the blood remained septic, although the bacteria in it were destroyed by the action of alcohol, or of compressed oxygen. But to this M. PASTEUR reasserts a fact which, if it be true, is of great importance in the whole controversy. He has asserted that bacteria may present themselves under two forms—first, as the rods which alcohol, compressed oxygen, desiccation, and a temperature lower than 100° C. can destroy; and, secondly, as highly refracting corpuscles which, on the other hand, resist a temperature of 120°, and resist also the action of alcohol and of compressed oxygen. These, he regards, as a mode of generation of the bacteria. They do, of course, also multiply by segmentation, but often, on one or several points of the bacterium, globular, highly-refracting corpuscles arise, the diameter of which is not greater than the thickness of the bacterium. After these appear, the rest of the rod quickly disappears. If an appropriate liquid is inoculated with these corpuscles, bacteria are developed in it just as if the liquid were inoculated with rod-like bacteria, and they constitute the resisting power of the liquids experimented on by M. PAUL BERT.

To live and grow bacteria need to absorb oxygen and give out carbonic acid. They are what M. PASTEUR terms "aerobic." Hence when these organisms are, within a limited area, in the presence of other organisms also "aerobic," a struggle for existence goes on in which the bacteria may not be the strongest. This is the explanation which he suggests for the fact that birds, for example, are insusceptible to the influence of blood from an affected animal, even when injected into the veins. The red corpuscles absorb all the oxygen of the blood, and the bacteria soon disappear, "suffocated," while they multiply in the blood of a dead bird as rapidly as in that of any other

animal. An analogous occurrence takes place when the bacteria of charbon are in the presence of other vibrios of the ordinary bacteria, of which the germs are so abundant in running water, or of the bacteria of putrefaction. The bacteria of charbon are suffocated, and the liquid ceases to possess its specific virulence, although it may still be septic, as any other putrefying organic liquid; and this explains the results obtained by MM. JAILLARD, LEPLAT, and SIGNOL, who killed animals by inoculating them with blood deprived of bacteria, as well as with blood containing bacteria other than those of charbon.

M. PASTEUR formulates his views in a series of propositions. First, the blood of a healthy animal contains neither microscopic organisms nor their germs. It is imputrescible in contact with pure air, because the putrefaction is always due to microscopic organisms of the nature of vibrios, and, spontaneous generation being out of the question, the vibrios cannot appear of their own accord. Secondly, the blood of an animal suffering from charbon contains no other abnormal organisms than the specific bacteria. But the bacteria are exclusively "aerobic," and take no part in putrefaction. Hence the blood from charbon is imputrescible by itself. In the dead body, however, putrefaction occurs because the bacteria of putrefaction enter it from without, and, as soon as they are unhindered by the normal vital processes of the tissues, lead to rapid disorganisation. Thirdly, the bacteria disappear in liquids in the presence of carbonic acid gas. If there are no corpuscle-germs, but only rod-like bacteria in the blood, they disappear entirely in a little time, so that the blood allowed to remain in contact with carbonic acid gas soon loses its specific property. Fourthly, the bacteria cannot develop, or can only develop with difficulty, in the presence of other microscopic organisms. Hence a certain time after the death of an animal from charbon, the blood does not contain the specific bacteria, while the vibrios of putrefaction, which are not aerobic, multiply with extreme rapidity; and if an animal be then inoculated with the blood, it dies of septicæmia, but not of charbon. M. PASTEUR found on examination that the blood of a sheep which had been dead of charbon sixteen hours contained only the specific bacteria, while that of a horse which had been dead twenty hours contained also the vibrios of putrefaction; and finally that of a cow which had been dead forty-eight hours contained a preponderating quantity of these vibrios. On inoculating guinea-pigs with the blood of these animals, striking effects were produced. All the muscles of the abdomen and the four feet were the seat of active inflammation, and here and there, especially in the ears, bullæ formed containing gas. The blood was diffluent. On examining these animals immediately after death, the muscles were found filled with active vibrios of putrefaction, and in the peritoneal serosity they had undergone extraordinary development. One drop of this serosity taken from an animal still living affected another animal profoundly, while a drop of blood from the heart had no effect. These were cases, however, of death by putrefaction, and not by the contagion of charbon. In contact with oxygen the vibrios of putrefaction cease to move, and disappear, being transformed into refracting corpuscles, which in a suitable soil reproduce mobile vibrios. There is thus a parallelism between the life history of the organisms of septicæmia and of charbon. These vibrios of putrefaction enter the system by the intestinal canal, for the process commences in the deeper parts. Their effect varies in different cases, and on this point we are promised a further communication.

These experiments and conclusions are marked by all the ability and ingenuity of their distinguished author, but are marked also by a very pronounced tendency to subordinate facts to theory; and we confess that the harmony established between the two does not seem to us to be always complete. We are certainly not yet in possession of the facts to justify such sweeping generalisations. To assign an arbitrary and different specificity to bacteria, which are distinguished by no visible characters, and occur in different morbid conditions, is certainly to go a long way towards the assertion of the fact to be proved. The explanation given of the varied effects of different conditions in the growth of bacteria is a matter of almost pure imagination. What ground is there for the assertion that there is more oxygen in the liquor sanguinis of a mammal than of a bird? While, on the other hand, the assertion that the bacteria of charbon cannot live in the presence of those of putrefaction, because they are "suffocated," is a purely theoretical explanation, and one which is not easily reconciled, at least in statement, with the assertion that the bacteria of putrefaction require no oxygen. Again, the order of the phenomena of putrefaction in the body is certainly not so uniformly progressive as to favour the idea that it starts only from the intestinal canal; and, if it were, the order is susceptible of other explanations than that of a progress of the living organisms.

A SPECIAL meeting of the governors of the Royal Medical Benevolent College, which was held on the 25th ult., and to which a brief allusion was made in THE LANCET of July 28th, seems, as we then indicated, to deserve more than a passing notice at our hands. The College has, since it was projected by the late MR. JOHN PROPERT in 1851, and formally opened in 1855 by H.R.H. the late Prince Consort, had a remarkably successful career. Subscriptions, donations, and legacies have been received not only from medical men, but from persons of rank and position in all classes of society. The Council has not existed in name only, but its members have worked, and worked very hard; and to this, in a great measure, the vigorous growth of the present establishment is due. The statement of receipts and payments for the past year shows that a sum of over £16,000 in the form of income has to be dealt with by the Committee; and anyone who chooses to look over the College and to examine the books will doubtless find this large sum excellently well accounted for. In brief, it may be honestly declared that the Medical Benevolent College is undoubtedly one of the best worked and best managed charitable institutions of this country.

But, in common with all other charitable institutions, the election of pensioners and foundation scholars involves a system of canvassing and profuse scattering of cards and other costly electioneering manœuvres, that are, as we have many times recorded, an unmitigated evil and a public reproach. The Council of the College, seeing the manifold defects of the present system, resolved some time

ago to do away with the public day of election, and now require all voting papers to be sent in three days before the general meeting. A great saving, financially and physically, thus accrues to the relatives and friends of the candidates. That miserable struggle for stray votes, the desperate importunity, the sad smiles, and the ill-concealed anxiety, all formed a scene painful in itself, and superlatively unsatisfactory to those who desire to see the most deserving cases succeed at the smallest possible cost. A very great step was thus made in the right direction. This year it seemed good to a section of the governors to urge upon the Council the necessity for further reforms, by abolishing the card and canvassing systems, and by the inauguration of a rule rendering candidates ineligible who, by themselves or by their parents or guardians, solicited votes. It is hardly necessary for us once again to record a very decided objection to the card and canvassing system, involving, as it undoubtedly does, a great expenditure of money, and physical as well as mental exertion that might be, and ought to be, far more profitably employed in other spheres of action. But the events of the annual meeting of the governors, and notably of the special meeting held on the 25th ult., showed that the advocates of further reform were premature as to the time, and eminently unhappy and indiscreet as to the mode and line of action. It is unfortunate that, when interests so important are involved, not more than from sixty to seventy persons can be found to attend among a list of many hundreds (if not thousands) of governors. The speeches delivered at the last meeting were in bad taste on both sides. Those who, in supporting the Council, opposed the resolutions, very warmly denounced the action of a small party of governors, who belong to the Charity Voting Reform Association, which body is, naturally enough, at the present time not particularly popular with the charitable public, in consequence of its avowed connexion with the Charity Organisation Society. But the speech to which we particularly refer was utterly denuded of its strength by a concluding appeal for "sympathy with the widow and the orphan," &c. On the other hand, the supporters of the resolutions offended good taste and the rules of debate by personal recriminations, by opposing the ruling of the Chair, and in other ways reminding the audience of somewhat similar scenes that have lately occurred "in another place." The resolutions, as we have already reported, were negatived by a very large majority. But, although the matter may be premature, it will most certainly crop up again, and, as we hope, not under the auspices of the Charity Voting Reform Association. There is an objection to the managers of one society interfering with the internal administration of another, and it is perhaps natural that the Council of the Medical Benevolent College, well and honestly as its members have hitherto worked, should resent such a proceeding. It seemed, however, that the opposition of the Council was not conducted in a specially genial or liberal spirit, and observations now and then rose to the surface that somewhat savoured of the "close borough" system of administration. But we still believe, after a short interval, if the subject is placed fully and fairly before the Council by some of the leading members of our profession, as apart from any society, that its members will see their way to "sympathise" *practically* "with the widow and the orphan" by relieving both from the burden and cost of canvassing for votes.

Annotations.

"Ne quid nimis."

THE MEDICAL GRADUATES OF THE UNIVERSITY OF LONDON AND CONVOCATION.

No matter what may be the effect of the late deliberate votes of Convocation of the University of London, one good has already resulted from the meetings of May and July; it has been proved that the medical graduates are a power—at any rate in Convocation, if not in the University itself—which has been, and is, for all practical purposes the Senate of the University. The medical graduates have, until recently, not taken that interest in the affairs of the University which their position demanded; they have not advanced their claims to be heard—claims which their work, public career, and public appreciation have given them. It is satisfactory, therefore, that men who have done much to advance their University in the esteem of the whole civilised world have at last been aroused from their indifference, and showed themselves willing to sacrifice time and convenience in order to take their legitimate share in the conclusions to which Convocation may come. Two years ago the medical graduates who dreamt of attending Convocation were few, and many who had passed through the old archway out of Piccadilly to their examinations were until lately completely ignorant of the new entry to the University buildings. At the meetings of Convocation medical graduates could be counted on one's fingers, and serious votes were arrived at in meetings so small that the Senate very justly took not the slightest heed of them. There are justifications for the indifference of the medical graduates, but it is needless to discuss them now that the indifference is gone.

The interest taken in the affairs of the University by the medical graduates has not pleased all members of Convocation. This will be evident from our last week's report of the extraordinary meeting of that body. One speaker, whose intended sarcasms fell flat on everyone, alluded to the important social duties which the medical men had neglected in order to attend Convocation, and seemed quite indignant that they should adopt a "high moral ground" in their objection to the late proceedings of the Senate. But this line of argument (?) did not make much impression on the large body of graduates present. It has been said, however, that the medical graduates organised themselves with the sole intention of preventing the admission of women to degrees in medicine, and that "a committee" was formed for the express purpose of whipping up the medical graduates to vote against the admission of women. But this is not a fact. In the course of the discussion at the extraordinary meeting of Convocation, reference was made to the Committee of Medical Graduates. One speaker treated it with scant civility, but Mr. Shaen did not quite agree with this gentleman. He, however, deprecated the formation of committees from single faculties. On general grounds we may be inclined to accept his views, but it should not be forgotten that the committee was constituted neither to attack nor interfere with other faculties, but to arouse the medical graduates to a right interest in the affairs of their university. This being the case, we see no necessity to defend the establishment of the committee, and we could find many arguments in its favour. And if, as we understand is the case, the strength, in all

faculties, at the last two meetings of Convocation was mainly due to the exertions of the medical committee, the greatest credit should be given to it. These meetings have changed Convocation from a debating forum to a power in the University, and the ultimate results must be momentous. Those who had laboured to fill the amphitheatre of the University needed no further justification than the full benches which each speaker had the opportunity and honour of addressing.

We have said there was no committee formed for the express purpose of resisting the admission of women; the fact is, the committee of medical graduates was started more than fifteen months ago, when the most sanguine of the women's champions did not expect the Senate of the University to reverse its previous decisions. At the meeting of Convocation immediately following, it was evident that the medical graduates had been "stirred up," and their presence enabled Convocation to carry a strong vote against a well-known clique in its body. Afterwards, the graduates of the Medical Faculty, aided by numerous Arts and Law graduates, refused to thank the Senate for a certain resolution; and surely they had a right by all legitimate means to gather themselves together in order to express their decided opinion. It is difficult, too, to understand why the medical graduates should not receive a fair amount of praise, because, dropping the women's question altogether, they resolved to defend the rights of Convocation. We should have supposed that all the graduates in other faculties would have at once sided with them in this matter; and the silence of many who have supported the rights of Convocation in former years was perhaps due, not to their belief that the action of the medical graduates was wrong, but to the fear that the proposed vote, if carried, would be a blow to the admission of women to medical degrees. It was very properly pointed out in Convocation that the medical graduates who had an opportunity of taking action were bound to act when certain graduates in other faculties legislated on questions concerning particularly the faculty of medicine without the least regard to its views. We are strongly of opinion that all that has recently occurred as regards Convocation of the University of London will not tend to foster that cliquism which for a long time has reigned in Convocation. It is absolutely necessary that all faculties should have a voice in Convocation, and, to use a Parliamentary phrase of recent adoption, it would be intolerable did one faculty year by year overrule another faculty on questions which the latter was best able to decide. We are convinced that many members of Convocation belonging to the faculties of Law and Arts welcome the growing interest shown by the medical graduates, and that if this interest be maintained men of note in all faculties will not think it waste of time to attend meetings of Convocation.

ARMIES FED ON DATES.

MIDHAT PACHA is reported to have said that an Asiatic soldier, to remain completely capable for marching and fighting, requires only one pound of dates every day. This statement must, it appears to us, be an exaggeration. The nutritive value of dates is well known, and, judging from published analyses, which, however, are not very concordant, the nitrogenous or flesh-forming constituents are present in them in fair proportion to the sugar and other non-nitrogenous or heat-producing constituents. But if we take the most liberal estimate, one pound of dates cannot contain more than an ounce and three-quarters of flesh-formers, ten ounces of heat-producers (chiefly sugar), and some fifteen or twenty grains of fat. Now, Dr. Lyon Playfair, from very extensive study, has established as the daily minimum necessary for bare subsistence two ounces of flesh-formers, twelve ounces of starch and sugar, and half an ounce of fat. This represents the lowest of workhouse diet, and is absolutely incompatible with work of any kind, and yet it is considerably better than the pound of dates.

Asiatics are undoubtedly frugal and abstemious, and, living in a warm climate, can work on food that would not content an Englishman. But war is hard work, and hard work can no more be done upon insufficient food than a steam-engine can be driven without coal. The coal required to enable a steam-engine to pump a certain weight of water, and the food required to enable a man to do it, are equivalent quantities, which can be calculated with considerable exactness. Two pounds of beef fat, for example, are, for the doing of work, about equal to three pounds of coal.

Let us now take an instance common enough in war. A man, weighing with his accoutrements 150 lb., marches twenty miles on level ground. The work he does is the same as if he had raised 350 tons a foot high. To do this work a certain quantity of the substance of the body must be oxidised, and the waste so occasioned must be replaced by extra food. If the extra food were bread, 21 oz. would be necessary; if beef fat, only 5 oz.; if potatoes, 46 oz.: some foods being more and some less valuable as fuel.

Extra work must always involve extra food, and the most "unspeakable" of Turks can no more escape from the necessity than the European foot soldier. If he fought day after day, and retained his strength upon a daily pound of dates, he would perform a harder task than any defeat of the Russians: he would defeat the law of the conservation of force.

ALLEGED PREVALENCE OF CHILD MURDER IN MACCLESFIELD.

THE Town Council of Macclesfield have, on the motion of Alderman Wright, appointed a committee to confer with the coroner and the medical profession, as to the health and sanitary condition of the borough, and to report to the Council the result of the interview. The Town Council deserves credit for this action. It would seem that not only is the infant mortality high, but that the frequency of deaths of children, apparently from want of parental care, has been forced on the attention of the public by the evidence of a leading medical man in the borough and by the remarks of the coroner. This evidence has been brought out by the death of a child which was the subject of an inquest, which showed that death resulted from neglect and lack of nourishment. Mr. Allwood, honorary surgeon to the Macclesfield Infirmary, after describing his observations at the post-mortem examination, said:—"He should like to embrace this opportunity of making public the great amount of child murder which was constantly taking place in Macclesfield. This case was only an illustration of cases which came before himself and his medical brethren almost every week. Unfortunately, the cases were generally so many, and of such a character that, although there was every moral proof of murder having been committed, legal proof could not be obtained, and the medical men were obliged to give certificates when there was no doubt that the people concerned were as guilty of murder as if they had simply cut their children's throats. He should very much like to see something done to put a stop to this wholesale murder of children. Every year scores of children were sacrificed, and he thought it was time public attention should be drawn to the matter."

The coroner's words were not less important. He said he quite agreed with all Mr. Allwood had said, and that there

was a great amount of child murder in Macclesfield. Since he first became coroner twenty years ago his opinion of Macclesfield had changed, for he had found in this town a dreadful state of immorality, and a frightful indifference to human life. In this case the mother did not seem to care whether the child lived or not. Such is the evidence on which Mr. Alderman Wright, in a speech perhaps rather long and discursive, but able and serious, induced the Council to appoint a committee to confer with the profession and the coroner on the sanitary condition of the borough. We shall be anxious to hear the result of this conference. We would only now remark, that the question really raised is rather a moral and social question than a sanitary one. The evil—or at least the allegation—is not that parents do not know how to take care of their children, and that care is necessary to prevent young infants from dying, but that, knowing all this, they fail, sometimes deliberately and intentionally, in that care without which the death of their infants will follow. Alderman Wright referred especially to two subjects which should be investigated in a radical way: first, the insurance system of infants, remarking that the mortality occurred after these children came into benefit and not before; secondly, the coroner's habit of neglecting at such inquests as the above to take medical evidence. It will be found that in many of the cases of these unfortunate children the parents have satisfied their consciences by taking advice of chemists, who ought to have refused to give the same. Alderman Wright made an excellent practical suggestion that all persons in whose care children are left by their mothers while at work should be licensed for this purpose.

TREPHINING IN PREHISTORIC TIMES.

A VERY interesting paper was recently read by M. Broca before the Académie de Médecine, which throws a curious light upon the medicine and surgery of prehistoric times. The operation of trephining appears to date from very early ages. By the oldest Greek medical writers mention is made of it as a usual operation, but in the time of Hippocrates it was applied only to traumatic lesions of the head, and appears to have been done with a circular trephine. But it seems that the operation is far more ancient, and was applied to the treatment of other head affections. Until quite recently trephining of a primitive kind was in use among some of the South Sea islanders for the treatment of epilepsy, insanity, and even headache, and the operation was done by scraping with a piece of flint, or broken glass when the latter was to be had from Europeans. In much the same way, and with similar implements, the operation was done in the "neolithic" or polished stone period, the age following the so-called quaternary, and preceding the bronze epoch. This period corresponds with the burial in dolmens, the use of agriculture, and the employment of domestic animals, and the making of hatchets of polished flint, though rough chipped flint instruments were still in use. In examining a number of skulls of this period Dr. Prunières and M. Broca discovered that the operation of trephining had evidently been done in two different ways, and for two different purposes, one being surgical, the other posthumous. The posthumous operation was performed only on those who in infancy had undergone the surgical operation. It was evident that in nearly all cases the surgical operation had been performed on infants, and that the patients had lived for many years was evidenced by the growth and development of the bone. But in many of the skulls which bore such signs it was found that a number of pieces of bone had been chipped away from the edge of the orifice, and some of these, either perforated for the purpose of suspension, or otherwise shaped as amulets, were found. In explanation of these facts, M. Broca refers to the early idea that epilepsy, insanity, and even headache and low spirits were due to demoniacal possession. He believes that the orifice was made in order to give exit to the evil spirit, and ever after the individual would be regarded as an object of peculiar sanctity. Hence the pieces of bone around were taken after death to form amulets and charms to drive away evil spirits. But still more remarkable was the fact that in all the cases of this posthumous operation, a part, usually about a quarter, of the margin of the original orifice was left intact, and that into the skull were inserted amulets made from similar pieces of bone from another individual. This, M. Broca thinks, not only indicates the belief in an existence after death, but that the person maintained his individuality, and therefore they would not rob him "in the other life of the glorious evidence of the operation he had undergone in his youth." This, as M. Broca states, is probably the earliest record of the belief in a future existence, if we may accept it as such. As to the operation, there seems to be evidence that it was always performed on the young, never in the adult, the instruments employed being too imperfect to allow of penetration of the hard adult bone. M. Broca tried the operation on a young dog, scraping with a piece of broken glass, and found that it was easy, and was not followed by any serious symptoms—indeed, he seems to think that performed in this way the operation is less serious than when done with an ordinary trephine.

The discovery throws a very remarkable light upon the history of the earliest ages of mankind. It is curious that it should have been made at a time when in certain quarters there seems to be a revival of the idea that trephining may perhaps be used with advantage in some cases of brain disease, when the symptoms are not obviously due to surgical injury. If it was successful before localisation of functions in the brain was thought of, perhaps it will also be now that the refinements of localisation are believed in, though some may be inclined to regard it as a satire on modern doctrines.

THE SPREAD OF INFECTION.

A CURIOUS and instructive case, touching upon the spread of infection, was heard on the 1st inst. in the Clerkenwell County Court. The plaintiff sued a monthly nurse for a sum of money paid to her on condition, it was alleged, that for a certain period of time she should abstain from taking charge of a case of childbirth, lest she should convey infection to the mother or infant. The facts testified to in evidence were as follows:—The plaintiff's wife, in childbed, had been attacked with scarlet fever, the nurse sued being in attendance. On the cessation of the monthly nurse's attendance (which was a few hours after the manifestation of scarlet fever, a proper sick-nurse then taking charge of the case), the medical man in charge advised that the monthly nurse should not attend another case of childbirth until after a lapse of four or five weeks, and that the gentleman, whose wife she had been in attendance upon, should compensate her for the loss of time. This was acceded to, and the monthly nurse was paid at the rate of 15s. per week for four weeks, during which, it was understood by the plaintiff, she should not undertake any case of childbirth. It appeared, however, that a fortnight afterwards this nurse engaged herself to attend upon another case, and as it seemed the sanitary law as to the spread of infectious diseases did not provide against the liability to danger arising in this fashion, the plaintiff sought to recover, on the ground of breach of contract, the payment he had made to the nurse. The monthly nurse traversed the evidence given for the plaintiff by the statements that she had been engaged to stay with the plaintiff's wife for a longer period

than she did stay, and had made her arrangements accordingly; that, in consequence of the plaintiff's wife being seized with scarlet fever, her stay in the house was terminated four weeks earlier than was anticipated, and that she was paid the sum sought to be recovered for this breach (so to speak) of engagement; that as to danger of infection being carried by her, this was not spoken of more than as a matter that she herself well understood, and which she believed was sufficiently provided against by her fortnight's abstention from any case, and by the disinfection of the clothing she had used in the patient's house. In support of this view, she averred that the sum paid to her was in no proper sense a compensation for giving up a case of childbirth, while it was the proper compensation for leaving a case at an earlier period than had been agreed upon. The learned judge expressed the opinion that, while he had no doubt of what was in the plaintiff's mind when he paid the sum, he was not convinced that the nurse had been made clearly to understand this. He, therefore, nonsuited the plaintiff, and ordered each of the parties to pay their own costs. It may be inferred that this novel suit would have been successful had there been sufficient evidence of the intention of the plaintiff having been fully conveyed to the nurse. This is, of course, peculiarly interesting to medical men who may have to advise persons in the position of the plaintiff in this case. First, the medical man should make sure that the advice he gives to the nurse is unmistakable, and such as he can testify to in the most positive manner on oath; and, secondly, he should, with this case in view, advise the person giving compensation to have a record of the reasons for it in writing. It is as well also to note the argument of the nurse as to the sufficiency of the compensation in view of the circumstances.

The course taken by the plaintiff in this case cannot be too highly commended. His immediate fulfilment of a moral duty in compensating the nurse under the circumstances, and his expenditure of time and money in endeavouring to bring her to account for, as he believed, a grave breach of duty, form an example of public spirit most gratifying to be met with.

MEDICAL GRADUATION AT GLASGOW.

THE usual brightness of "capping day" was this year qualified at Glasgow by one circumstance that excited many regrets. The address to the new graduates was delivered by Professor Allen Thomson, F.R.S., and it is not a secret that Dr. Thomson's connexion with the University, which has been a very honourable one, almost closes with the address. The name of Allen Thomson has been honoured in connexion with anatomy and physiology for longer than one would suppose, to look at the genial and distinguished professor. Dr. Thomson was teaching in these subjects before many of us were born. He is one of those true teachers, rare in this country, that make a life-work of teaching. He began private teaching in physiology in Edinburgh in 1831. From 1839 to 1840 he filled the chair of Anatomy in Marischal College, Aberdeen. In 1841 he was again a private teacher in anatomy in Edinburgh. From 1842 to 1848 he filled the chair of the Institutes in Edinburgh. In 1848 he became Professor of Anatomy in the University of Glasgow, and has continued so for the respectable period of nearly thirty years. The chair seems favourable to length of tenure. If we mistake not, Dr. Thomson's predecessor, Dr. Jeffray, who succeeded the father of the distinguished Sir William Hamilton, held the chair for fifty-nine years. Professor Gairdner, after the address to the new graduates, paid a high tribute to Dr. Thomson's work and character. One of the best compliments we can pay Dr. Thomson is to note one or two of the points in his address to the new graduates. He insisted on the fact that the Bachelorship in Medicine of the University was in fact a full qualification, and ought by public bodies to be so regarded. He blamed the Corporations for maintaining the now somewhat illusory distinction between so-called medical and surgical qualifications. We entirely agree with Dr. Thomson in thinking it somewhat absurd that when examinations embrace the whole range of medical and surgical practice, the qualification, should be only one-sided. "It was a great pity," said Professor Thomson, "that examinations, which in themselves were necessary things as tests, should interfere so much with the regular course of study. ..... It was now acknowledged by all who had any experience that not only in medicine, but in many other branches of knowledge, examinations for which students had to make preparation were the means of diverting to a very great extent their attention from well arranged and efficient study. ..... There could be no doubt that it was too much the case that examiners were apt to enter into too much detail." With regard to education, he expressed the opinion that the method of teaching was far more extended than it ought to be; and though disclaiming any intention of underrating lectures, he insisted on the growing importance of self-study, quoting Von Baer in support of his views. He thought the whole subject should be revised, and the opinion taken, not only of teachers, but of students and graduates. He advocated the shortening of lectures and the encouragement of all means of practical study. These opinions are very weighty, and opportunely expressed. Thirty-two students took the degrees of M.B. and C.M., two of M.B. alone, and nine that of M.D. The two medalists are Dr. William Gardner, medical missionary, Australia, and Dr. William Young Turner.

METROPOLITAN ASYLUMS DISTRICT WORK.

THE Annual Report of the Committee of Management of the Homerton Fever and Small-pox Hospital and the first Annual Report of the Committee of the Training Ship *Exmouth*, have recently been issued, and are signed by Mr. James Barringer and Admiral Robertson, the respective chairmen. As to the former institution, the chief topic is, of course, the epidemic of small-pox. The report recites that late in May, 1876, several cases arose in the Homerton district, and when this first note of alarm was sounded, the hospital, which had been used for scarlet-fever cases, was thoroughly disinfected and otherwise prepared for its legitimate work. Patients were admitted in the first week of August, and within eight weeks from that date 86 cases were received, the disease having reappeared in nearly all the northern and eastern portions of London, and with especial virulence in Islington. In October it was found necessary to increase the accommodation from the certified number of 120 to 140; and as this did not suffice for the demands, it was found necessary to arrange for the transfer of convalescents to other hospitals not so pressed. As the epidemic increased, and the resources of the establishment were strained to the utmost, it was resolved to receive small-pox patients into the Fever Hospital, eliminating as judiciously but as quickly as possible the cases of fever then in the building, the Stockwell authorities coming to their assistance. The praiseworthy energy of Dr. Alexander Collie, the superintendent of the Fever Hospital, with the aid of the steward and matron, made matters easy; for, according to the report, "within ten hours after directions were given for the hospital to be used for small-pox cases two wards had been thoroughly disinfected, supplied with new bedding and

clothing, and ready in every respect for the reception of patients. No less than 151 small-pox cases were received five days after the requisition for the change was made, and at the close of the year both hospitals were quite full, and two wooden huts were being completed, one for acute and the other for convalescent cases. The total number of admissions into the small-pox hospitals was 620, of whom 106 died, the mortality being 13·70 per cent., if those cases be deducted which died shortly after admission, and which cannot be said to have come under treatment. From the opening of the Fever Hospital for small-pox cases to the end of the year 284 were received, 42 of whom died. Before the Fever Hospital was diverted to the reception of small-pox patients 928 cases had been under treatment; 138 died, and 64 were transferred to Stockwell. Fourteen members of the staff contracted fever in the discharge of their duties, all of whom recovered. It is satisfactory to find that the Board accorded to Dr. Collie, the medical superintendent, a special vote of thanks for the prompt and able manner in which he seconded the efforts of the committee to prepare the Fever Hospital for the reception of small-pox patients.

ARMY MEDICAL SCHOOL AT NETLEY.

THE summer session of the Army Medical School was brought to a close on Monday, the 6th instant. Seventeen gentlemen were recommended for commissions in the Army Medical Service; eleven in that of the Royal Navy; and twenty seven in Her Majesty's Indian Medical Service. Dr. J. J. Mullen, of the Army Medical Service, was the winner of the Herbert prize, for superior attainments in all branches of study; and Dr. T. K. Rogers, of the Indian Medical Service, gained the gold Martin memorial medal, for special knowledge of tropical diseases and their treatment. Lieutenant-General Sir J. Garvock, G.C.B., commanding the southern district, accompanied by his aide-de camp, Lord William Seymour, of the Coldstream Guards, came over from Portsmouth, to hand the prizes to the successful competitors, which he did with some kind words of congratulation to each. The General afterwards made an address, full of good advice and friendly encouragement, to the assembled candidates for commissions in all three branches of the public service. Sir William Smart, K.C.B., the principal medical officer of the Royal Naval Hospital at Haslar, and other visitors, together with the whole of the staff of the Royal Victoria Hospital, were present at the closing ceremony of the school session. Surgeon-General Massy, C.B., and the officers of the medical staff at Netley, afterwards entertained General Sir J. Garvock, and a large number of guests, at luncheon in their mess-quarters.

SEASIDE LODGINGS.

THOSE who repair to English seaside watering-places in quest of quiet and health should be warned as to the inconveniences with which they will be beset. First, it may be set down as a certainty that from morning until night they will be pestered by the maddening sounds of "music," organs, bagpipes, hurdy-gurdies, uttering hideous noises, and wretched little children dancing, screaming, and yelping in dolorous accompaniment. In the hours of repose sleep will be denied them by a stuffy atmosphere in crowded houses poisoned with mephitic vapours. Their meat and drink will be poor in quality, execrably cooked, and served in contempt of comfort and decency. If one tithe of the miseries which confront the visitor to one of our places of fashionable resort during the summer season beset him at home he would abandon housekeeping. The discomforts of life in lodgings have been so often and ably exposed that it might seem strange no amendment has been produced, if it were not a foregone conclusion that lodging-house keepers, particularly such as prey on the class of sojourners at the seaside, have neither conscience nor emulation. Meanwhile, we cannot help thinking that the authorities of towns and villages dependent on the harvest reaped from the thousands who visit them for a few weeks in the summer and autumn, are remiss in the care of their own interests. There would surely be no insurmountable difficulty in carrying out a system of inspection to which the lessees of lodging-houses might be invited to submit, and which should include, besides such fundamental matters as a pure water-supply with clean house-cisterns, general cleanliness and the like, a guarantee of respectability, the possession of necessary appliances for household efficiency, with the knowledge and power of plain cooking. If, when the visitor arrives at one of these seaside localities, it were possible to apply at a central office under the ægis of authority, for a list of habitable and healthful apartments, duly marked on a plan, the convenience would not only be a boon to the public, but the registration would lead indirectly to many and great improvements. No obstacle exists to the inauguration of a system of inspection and record such as we suggest beyond the *vis inertiæ* which opposes all improvement. If a register were opened in one district, the best of the lodging-house keepers would instantly apply to have their apartments entered, and these would be first filled and scarcely vacant during the season. The keepers of other houses must follow the example set them, and, to qualify, improve. The movement would rapidly spread to other places, and, in the long run, with beneficent results.

THE HEALTH OF ST. PETERSBURG.

THE Russian Government cordially and hospitably received the International Statistical Congress a few years ago, and showed an earnest appreciation of the importance of the subjects discussed by the delegates who met in St. Petersburg from all parts of the world. Somewhat tardily the statistical labours of this Congress appear to be bearing fruit, even in the empire which some would persuade us is little better than a wilderness inhabited by "Muscovite hordes." The Registrar-General, in his last Weekly Return, announces that he has just received, through the Foreign Office, from Count Shouvaloff, the first portion of a series of weekly mortality statistics relating to the city of St. Petersburg, which, we are informed, now contains a population of 669,741 persons, and is thus one of the five largest cities in Europe. These returns, just received, relate to the seven weeks ending 30th June last, during which 3100 deaths appear to have occurred within the city, being equal to an annual rate of 34·5 per 1000 persons estimated to be living. It has long been known that St. Petersburg suffers from a terribly high rate of mortality, and these figures seem to corroborate the fact. During this period of seven weeks the annual rate of mortality in London did not average more than 20·5 per 1000 in equal numbers living; therefore the deaths in St. Petersburg were as 168 to 100 in London. There are one or two features in these death returns from St. Petersburg which call for notice. The deaths of males during the seven weeks were as 148 to 100 deaths of females, whereas in London the proportion was 110 deaths of males to 100 of females. The numbers of males and of females in the population are not stated, and therefore the true mortality of each sex cannot be estimated. The annual death-rate from the seven principal zymotic diseases in the city of St. Petersburg during the seven weeks was equal to 8·4 per 1000, whereas the rate in London from these diseases during the same period did not exceed 3·3 per 1000. Fever

appears to be just now the most fatal zymotic disease in St. Petersburg, especially fever of the enteric type. The mortality from typhus, enteric, and other forms of fever in St. Petersburg during the seven weeks ending 30th June last was more than six times as great as that which occurred in London. The Registrar-General points out that Constantinople and Madrid are now the only great European capitals that do not furnish official mortality statistics.

THE PROVIDENT DISPENSARY SYSTEM IN LONDON.

A CONFERENCE called by the medical committee of the Charity Organisation Society was held lately, at the rooms of the Medical Society, Chandos-street, to consider the best means of bringing into general use in the metropolis the Provident Dispensary system now adopted in many of the large provincial towns. Mr. Timothy Holmes presided. A resolution was agreed to to appoint a committee to report on the best means of giving effect to the views expressed, and that this committee should consist of representatives of free hospitals and dispensaries and other cognate institutions in the metropolis, of representatives of the metropolitan provident dispensaries, and of the members of the medical committee of the Charity Organisation Society, and that Mr. Holmes should be its chairman. We heartily wish success to this movement, and bespeak for it the help and favour of all who want to do great good in a thoroughly sound and unobjectionable way. In these days, when shrewd men are equally anxious to be charitable and to avoid doing harm by being so, the provident dispensary movement is one to which they may advantageously bring all their shrewdness and all their charitableness. It seems to us very wise to get into a joint-committee representatives of the free hospitals and dispensaries and representatives of the provident institutions. There should be no permanent estrangement between these two parties. But in the old and free institutions there are old views of charity to be encountered, which, despite the Charity Organisation Society, have still a great hold on a large class of people, especially where sickness is an element in the distress to be relieved. There is only one way of modifying these views, and that is by friendly discussion, and by showing that the provident dispensary system may be extended without hardship—indeed, with great advantage—to the poor.

INFECTIOUS DISEASES IN WORKHOUSES.

THE sanitary progress which has in so many ways been stimulated by the Public Health Acts of 1872 and 1875, runs a great risk of being seriously hindered through the fatal blunder by which public health organisation was placed under the control of the Poor-law authorities. The Local Government Board has adopted a policy with regard to the provision of hospital accommodation for infectious diseases which, if it be intended to check the slowly increasing tendency of local authorities to incur the expense of such provision, is likely to prove eminently successful. Instead of affording every facility for the provision of such hospitals for infectious diseases, available for the joint use of guardians and of sanitary authorities, the Local Government Board has insisted upon the necessity for duplicate provision of these hospitals. As a natural result, scarcely any special hospitals for infectious diseases are being erected, and the much-to-be-condemned practice of sending cases of infectious diseases into workhouses is being continued, not unfrequently with disastrous results. Many workhouses have so-called infectious wards, which afford no real protection from the risk of communicating disease to the ordinary in-door paupers. A striking example of the dangers of this reprehensible system of treating infectious diseases in workhouses is mentioned in the last Quarterly Return of the Registrar-General. During the three months ending June last, an outbreak of small-pox occurred at Orsett in Essex, and nine deaths were referred to this disease; eight of these fatal cases occurred in the workhouse. We are told that the guardians, as the Rural Sanitary Authority, used the infectious wards of the workhouse for the reception of small-pox patients, and that early in June small-pox broke out in the workhouse itself, and also in the village of Orsett. There can be no doubt that the guardians of Orsett, in their joint sanitary and Poor-law capacity, should have provided hospital accommodation for infectious diseases apart from the workhouse, although it is to be feared that the Local Government Board would not favourably regard such an arrangement. Orsett is, unfortunately, one of those rural sanitary authorities which have divided the responsibilities of medical officers of health for the district among their Poor-law medical officers, at almost nominal salaries, thus minimising the chances of sanitary progress.

MR. GLADSTONE ON SANITATION.

IN the course of some sound practical remarks upon sanitary subjects delivered on the occasion of a gathering in the grounds of Hawarden Castle, a few days ago, Mr. Gladstone summed up the principal drawbacks to the health of populous districts as follows:—"As a rule there are three disagreeable things in large towns: one is noxious smells, another is want of pure water, and the third is the enormous abundance of smoke."

While recognising the amendment produced by the operation of Acts of Parliament during the last forty years, the ex-Premier urged, with great force, on his hearers the importance of individual efforts to abate these sources of disease:

"I recommend you to think over these matters, because you have a great deal of power in your hands, which you may employ usefully in getting these nuisances abated. God made this world to be pleasant to dwell in. I don't mean to say He made our natural and physical condition to be pleasant. The air, the sun, the skies, the trees, the grass, and the rivers—they are all pleasant things; and we go about spoiling, defacing, and deforming them; and we ought all to do what we can to prevent their being so much defaced and deformed in the future as they have been in the past. Take that as the moral of this little speech."

No better moral could be pointed. It would spoil the text to amplify the discourse. In the long run this truth *will* make itself apparent. Sanitation is a personal enterprise; the work must be done in detail, and by individual effort. The fact should be pressed home.

"TRAMS."

CARS running on tramways laid in the streets may be, and undoubtedly are, a convenience, but, as we have more than once pointed out, the noise accompanying their use is a great nuisance. The jingling of bells, in some districts adopted as a precaution against accident by warning pedestrians of the approach of the car, intensifies the din, and has induced the inhabitants of neighbourhoods through which tramways are laid to complain bitterly of the annoyance. Without, however, this needless exaggeration of the evil, the clatter and rumble caused by heavy cars rushing through crowded streets are a source of great suffering and worry to invalids and persons with irritable brains resident in the locality. If the Americanising of our traffic institutions is carried much further it will be desirable to insist that measures shall be taken to minimise the nuisance by enforcing the use of every appliance which ingenuity can

devise to obviate noise. Only those who either themselves suffer acutely, or are brought into close contact with the sick and sensitive, are aware how great the mental and physical injury done by the noise of street traffic really is. That caused by cars passing and repassing at short intervals —first heard in the distance, then growing overwhelming, and diminishing as the heavy vehicle proceeds—is well-nigh intolerable; and should be considered, at least so far as to mitigate annoyance, for the sake of the sick, when extensions of the present lines are proposed in Parliament, and the local vestries.

THE BRITISH MEDICAL ASSOCIATION.

THE annual "feast of reason" and "flow of soul," in which a varying proportion of the subscribers to this Association indulge, has been celebrated this week at Manchester, and, as we write, news arrives indicating that the people of that rich and important city are giving the doctors a hearty and hospitable welcome. During the week the transition from labour to refreshment has been effected by easy and very frequent stages, and the pleasures offered by the citizens appeared to have been superlatively alluring, inasmuch as many of the most familiar faces were conspicuous by their absence from the sectional meetings. Perhaps it was the heat. Anyhow, abundant opportunities were offered for the resuscitation of the body as well as for the improvement of the mind, and so this, in common with former meetings of the Association, may be fairly pronounced a success.

HOSPITAL SUNDAY FUND.

THE Distribution Committee has given great satisfaction this year by a prompt distribution of what it has to give. *Bis dat*, &c. Otherwise the sum collected is not satisfactory. It must be remembered that the whole is not yet quite gathered in; but after making this allowance the amount is slightly less than in the preceding year. The amount ready for distribution last week, and the distribution of which was sanctioned by the Council, was £24,960—viz., £22,747 to 76 hospitals, and £2223 to 43 dispensaries. The number of institutions claiming and receiving awards grows year by year, which, with a slightly diminished sum to distribute, makes the award to most of the hospitals and dispensaries less. We hope the Council next year will take further steps to increase the amount of the collection. Nobody will maintain that £25,000 is a sum which the Council should be content with, or regard as the final form of this great institution. As to the particular awards of this year the meeting was unanimous, as it was also in passing the following resolution:—"That inasmuch as an inquiry into the management of the Hospital for Diseases of the Throat had lately been held, at the request of his Royal Highness the Prince of Wales, the patron of the institution, it was resolved the proposed award to this hospital be withheld for the present."

BOYS-AT-ARMS.

OUR soldiers are no longer *men*-at-arms; they are boys. The short-service system so blindly revived a few years ago, after its conspicuous failure early in the century, has not only left the country dependent upon the most unstable classes of the population for the raw material of its land forces, but is already producing the characteristic effects of such a system by reducing the marching regiments to the level of schools and classes of under-grown and half-trained youths. Possibly to those who live in the midst of the army the change which has been wrought is not strikingly apparent, but to those who were familiar with its condition five-and-twenty years ago, and are again thrown into contact with the rank and file of the line, the deterioration is painfully obvious. It is impossible that, in case of need for any large demand on our resources, their defective character should not be felt. Surely it would be worth while to consider the altered condition before an emergency arises. Soldiers are not to be made in a day, and if, some five or six years from the present date, the boys now composing regiments of the line are to be drafted into the reserve, their places must be filled by equally weedy youths with no settled object in life, so that the army cannot possibly improve. It is a humiliating result of all the ingenuity bestowed on the army question that we are not only left with legions of boys to replace the men of a quarter of a century ago, but that the system inaugurated affords no hope or prospect of a state of matters more creditable and satisfactory.

TREATMENT OF CHRONIC PHARYNGEAL CATARRH.

SOME time ago, M. Michel recommended the employment of the galvano-cautery for the treatment of chronic pharyngeal catarrh. The plan has been practised by Riesenfeld in fifty cases, in none of which, however, was there any follicular enlargement. The battery used was that constructed by Middeldorpf, to one electrode of which a knife-shaped instrument was attached, and a series of strokes were made over the tonsils and uvula, the number varying with the severity of the case. The patients bore the operation in all instances exceedingly well, the only inconvenience complained of being the odour of the burnt membrane. Care must always be taken that neither the electrodes nor the conducting wires come into contact with the side of the tongue, lest it should be burnt. The operation is sometimes followed by a little difficulty in swallowing, and the patient should always be directed to gargle the throat frequently for a day or two, and take only fluid nourishment. The eschar becomes detached in the course of four or five days, and the suppuration, if any, rarely lasts more than a week. In the slighter cases a single application of the cautery is sufficient, and even in the worst cases M. Michel has never found it requisite to apply it more than five times.

"BRICKIES."

THE chief inspectors of factories, Mr. Redgrave and Mr. Robert Baker, have opportunities of chronicling results of official work far less dry than those found in most of our Blue-books, and of these they fully avail themselves. The last report just issued contains, among other equally interesting matter, some special remarks about brickmaking. Brickfields, in which a terrible amount of overworking formerly obtained, were brought under the operation of Factory Acts in 1867. As regards the hours of work, Mr. Whymper, one of the assistant inspectors, reports that it was not uncommon for a child nine years old to be loading barrows from 5 A.M. to 9 P.M.; and one adult witness computed that, when a child under nine years, he lifted 45,000 bricks per week, each brick weighing 10 lb., or over three tons per 1000. These children frequently had to be carried home after the day's work, perhaps three miles. Men have been found at 4 A.M. in the morning sitting sound asleep with their supper in their hands; and it is recorded of a Roman Catholic workman that "he was often found in the morning kneeling by the side of his bed in the attitude in which he had begun to say his prayers the night before."

The operation of the Act has remedied most of these sad effects of overwork, but it appears that irregular hours, consequent upon "feasts," &c., and the enormous quantity of beer consumed, are naturally followed by a great press of

work. It seems, however, that latterly drunkenness has much diminished, although, among statistics relating to beer, it is recorded that one master allows ten pints a day to each "brickie." Many masters are also publicans, and some have public-houses in their own fields, so as to be able to extract profit out of the idle hours of their men.

ST. BARTHOLOMEW'S HOSPITAL.

WE learn that the governors of St. Bartholomew's Hospital have, at the instigation of their treasurer, Sir Sydney Waterlow, resolved to add to the present number of their beds twenty-four more cots for children. These cots are to be constructed on the most approved principles, and will be very similar to those in use in the new wing of the Children's Hospital in Great Ormond-street. They will be distributed equally between the medical and surgical wards, and will give, with those already in use, sixty-one beds for children.

It may still be an open question whether children should be treated in general hospitals. Practically, it is found that they are happy enough in them, and that their presence is acceptable to other patients. We may trust Sir Sydney to see that suitable nurses are provided for them. For educational purposes, too, it is important that children's diseases should be treated in general hospitals.

THE SUNDERLAND AND BISHOPWEARMOUTH INFIRMARY.

AT the annual general meeting of the governors of this institution, held on the 31st ult., an important reform was effected in the rules that have heretofore regulated the admission of patients. Mr. G. B. Morgan, chairman of the medical board, moved a resolution to the effect that free admission be granted to all infirmary patients, subject, of course, to the discretion of the medical officer on duty. This resolution was carried, so that here, as now in most other similar institutions, the ticket system is abolished, and if selection be necessary, the most serious cases will be first admitted, due regard being paid to their eligibility in other respects. The subject has been under the consideration of the committee for several years, and it is satisfactory to know that so important a change has at last been successfully accomplished.

During the past year 538 patients have been admitted into the infirmary, and the death-rate was 7·4 per cent.; or, excluding those who died within twenty-four hours after admission, 5·3 per cent. The infirmary accommodated throughout the year a daily average of sixty patients. The inmates of this infirmary are nursed by deaconesses trained at Tottenham, and the quality of their work is reported to be very good.

HALF MAD.

WE have repeatedly called attention to the danger of allowing lunatics to be at large in the midst of the busy population without protection. An especial peril attends the practice of permitting persons who, though not perhaps actually insane, are prone to indulge in the strangest vagaries or eccentricities, to wander about under no guardianship at the seaside and places where they may be exposed to exceptional provocation and causes of excitement. Cases have recently been brought to our knowledge which make it desirable to appeal to the prudence and good sense of officials in charge of piers and assembly rooms, and constables on duty at esplanades and places of promenade, to protect these poor creatures from the ignorant mischief of men and women who, judging from appearances, should show more intelligence and sympathy than to mistake semi-madness for intoxication and bait the victims of a pitiable calamity for their own amusement and that of bystanders as obtuse as themselves. These "strange" folk ought to be under protection, but the circumstance that they are neglected and left at the mercy of common sense and common kindness—two rare qualities—does not excuse those who abuse their imbecility from the imputation of folly and want of ordinary humanity. It is, we think, the obvious duty of local authorities to take measures for the protection of the poor people to whom we allude, and, in their own interest, special instructions should be issued to their officers without delay.

THE DRAINAGE OF WINDSOR.

THE drainage of this borough is now in a fair way of being completed. Mr. Hawksley, C.E., is engineer, and he has constructed a large brick sewer from the lowest part of the existing system to the Ham at Old Windsor, a distance of about two miles. The sewage is conveyed across the navigable cut of the Thames at that point, and will there be treated by precipitation, disposing of the effluent water by filtration. The farm upon which these operations are to be carried on adjoins the Windsor Castle sewage farm, so that those interested will have a good opportunity of comparing the separate and the precipitation systems. Our readers will probably recollect that the entire drainage of Windsor Castle was several years since reconstructed on the separate system, as designed by Mr. William Menzies, Deputy Ranger of Windsor Forest and Parks. The system continues in successful operation, and has also been applied with equally satisfactory results to the neighbouring town of Eton. Indeed, having had in the immediate neighbourhood two very favourable experiences of this system of drainage, it appears somewhat strange that the Windsor authorities have chosen a plan the success of which is by no means as yet established. In any case, it is satisfactory to know that Windsor will soon be taken off the list of Thames polluters—i. e., if the quality of the effluent water be fairly satisfactory. The works have cost about £43,000.

THE ARMY MEDICAL SERVICE.

WE would call attention to an article in our present number embracing the more salient points in the history of the above service. Its value at the present time mainly consists in this: that its author has had a very extended experience, and has an intimate knowledge of the Army Medical Department; and that his position is such as enables him to consider the subject in a perfectly independent and dispassionate spirit.

MADEMOISELLE TITIENS.

IN our last notice of the health of Mdlle. Titiens we were regretfully compelled to state that the symptoms had suggested cause for anxiety. It is, unfortunately, impossible to say the condition of matters has improved. There seemed to be some amendment; but considerable distress continues, and the outlook is not so reassuring as could be desired.

FACTORY ACCIDENTS.

THE last Factory Acts Reports for the six months ending April 30th of the current year show a total of 3008 accidents during the half-year, 143 of which were fatal. A further epitome of these shows 22 amputations of right hand or arm, 38 of left hand or arm, 274 of part of right hand, 217 of part of left hand, 25 of any part of leg or foot, 169 cases of fracture of limbs or bones of trunk, 101 of fracture of hand or foot, 231 cases of injuries to head and

face, and 1798 cases of lacerations, contusions, and other injuries not enumerated above. Of these 3008 victims, 2328 were males and 680 females, including no less than 241 children. It must be remembered that the list does not include minor accidents, but those which are of such a nature as to prevent the person injured from returning to his work in the factory within forty-eight hours after the occurrence of the injury.

PRINCE ALBERT VICTOR.

THE course of the fever in the case of H.R.H. Prince Albert Victor has been as anticipated in our last report. On Saturday last, the 29th day, the temperature fell to 98° F., together with an abatement of all the symptoms. The convalescence is now satisfactorily established.

ON the 22nd ultimo, the elections for Professors of Ophthalmic Surgery and of Midwifery respectively took place at the College of Surgeons in Ireland. The candidates for the Ophthalmic chair were four in number—Messrs. Jacob, Rainsford, Stoney, and Swanzy, the latter-named gentleman being appointed. For the Midwifery chair six competed—viz., Drs. Beatty, Halahan, Kirkpatrick, Macan, Madden, and Roe, the last being selected. Mr. Swanzy is surgeon to the National Eye and Ear Infirmary, ophthalmic surgeon to Steevens' Hospital, and was formerly assistant to the late Professor Von Graefe of Berlin; whilst Dr. Roe is an examiner in midwifery of the College, and has been attached for several years to the Coombe Lying-in Hospital. Both appointments have, it may be added, given every satisfaction.

THE *Birmingham Daily Gazette*, in noticing the quarterly report of Dr. Hill, the medical officer of health, just issued, says:—"Notwithstanding all that has been done during the last few years with the object of improving the sanitary condition of the town; though thousands of pounds have been spent in drainage schemes, and in a so-called model method of removing night-soil; though surface wells are being improved out of existence; the death-rate last quarter was 25·06, considerably higher than the rate in the corresponding quarter of the four previous years."

THE annual meeting of the Medico-Psychological Association was held on Thursday, August 2nd, at the Royal College of Physicians, London, and was very numerously attended. Dr. Fielding Blandford, the president, in his address, gave an interesting historical sketch of the progress of lunacy legislation during the last hundred years. Dr. Crichton Browne, Lord Chancellor's Visitor in Lunacy, was unanimously chosen president elect of the Association. In the evening the members and their friends dined together at the Ship, Greenwich.

AT a meeting held last week of the visiting surgeons and physicians of the Dublin hospitals, it was determined that the fees for students attending those institutions should be increased. The tariff for the future will be twelve guineas for nine months' attendance, eight guineas for six months, and five guineas for three months; being a considerable increase on the previous fees. It was also resolved at the same meeting that the practice of taking perpetual pupils should be abolished.

THE office of Master in Lunacy, vacant by the death of Mr. Samuel Warren, has been filled by the appointment of Mr. W. Norris Nicholson, who has for the last sixteen years been the Lord Chancellor's legal Visitor of Lunatics and chairman of the Board of Visitors. Mr. Nicholson is succeeded by Mr. Edward Ross, Secretary of Commissions.

DR. SAMUEL M'BEAN has been transferred from the chair of Botany in the University of Durham College of Medicine, to that of Materia Medica in the same College.

BRITISH MEDICAL ASSOCIATION.

THE proceedings of the meeting at Manchester were duly inaugurated on Tuesday morning, the 7th instant, by a special choral service at the Cathedral, and a sermon by the Lord Bishop of Manchester at eleven o'clock. The service was arranged by the bishop so as to be especially appropriate, and the sermon, by its manly eloquence and tone, elicited universal approbation.

The usual meetings of committee and council were followed in the afternoon by the general meeting at three o'clock, at which the principal feature was the address of Dr. Wilkinson, the President. The address, which was listened to by a very large audience, was of an admirably practical character. Owing, however, either to the acoustics of the building, or to some other cause, the most eloquent part of the address could be heard only by those who had the good fortune to sit in the seats nearest the speaker. The President gave a warm welcome to the British Medical Association on its again visiting Manchester after an interval of twenty-three years, and then proceeded to discuss the subject of sanitary reform, its progress marking better than anything else the march of medical science and the increasing power and influence of the medical profession. As serving to illustrate this progress in many details, the speaker gave an extensive history of the Manchester Royal Infirmary, with the necessary local obstacles it has had and must have to encounter, in endeavouring to secure for patients an approach to the advantages obtainable in hospitals with better air and surroundings. In hospital construction the speaker urged the advantages of the pavilion plan, with central offices for administration, or built *en echelon*, as in America, Dresden, and many other places. Also, the cottage plan, the most important idea, next to air space and drainage, being thorough segregation. The establishment of hospitals for the well-to-do classes was also highly commended, as calculated to meet a want more neglected than that suffered in many cases by those who are in actual and distressing poverty. In closing, the affiliation of the Manchester Royal Infirmary and School of Medicine with Owens College was referred to as full of the highest promise for the future of medical education in Manchester.

The *soirée*, given by the President, at Owens College in the evening was a brilliant affair, varied with whatever in microscopy and chemistry, &c., could most combine entertainment with instruction.

Long before the time had come for the second general meeting on Wednesday morning, in Owens College, the advantages afforded by the central position of Manchester were seen, the number of members who had arrived being apparently as large, if not larger than at any previous meeting of the Association. Not a small part of this attractiveness might be found, perhaps, in the large numbers of private invitations which had been given to members and foreign guests by the President, by Mr. Lund, and others of the leading members of the profession in Manchester, whose generous efforts and hospitality knew no bounds.

As the time arrived for the Address in Medicine, the lecture theatre rapidly filled, until at its commencement there was no standing room left. Of this address, suffice it for the present to say that in moving a vote of thanks to its author, Sir W. Jenner said it was the most able and interesting address to which he had ever listened. The subject was the relation of minute organisms to contagious diseases and the origin of bacteria.

After the conclusion of this address, remarkable for its combination of research and direct practical bearings, a new event in the history of the Association took place. Medals and awards, instituted for the first time by the British Association for conspicuous merit, were conferred

upon the surgeons who recently distinguished themselves in the colliery accident at Pont-y-pridd, by the President of the Association.

On Thursday Mr. Spencer Wells delivered the Address in Surgery, which will be found in another place. Dr. Sayre, of New York, gave demonstrations of his treatment of cases of spinal curvature, and Dr. Benjamin Howard, also of New York, read a paper on the More Useful Methods of Artificial Respiration (an abstract of which will be found in another column). Dr. Robert Barnes gives the address on Obstetrics to-day (Friday), after which the last general meeting will be held; and to-morrow the members will have an opportunity of disporting themselves at Blackpool, and of enjoying the genial hospitality of the mayor and corporation of that borough.

THE ARMY MEDICAL SERVICE: ITS PAST AND PRESENT HISTORY.

(From a Correspondent.)

THE condition of the Army Medical Department has lately received a good deal of attention. It has, on the one hand, been the object of violent abuse, no language being deemed too strong in discussing its grievances and commenting on the conduct of the authorities who are responsible for its management. While, on the other hand, many of these grievances are denied, others are alleged to be the unavoidable result of those sweeping changes which have affected every branch of the military service, and many are stated to have been remedied as far as circumstances will admit. The first class is represented by a knot of discontented men who are loud in their complaints; the other may be held to consist of Mr. Secretary Hardy, the military authorities, and perhaps the Director-General. I say perhaps, because there is reason to believe that he has not approved of all the measures introduced, and has been compelled to act upon principles laid down for his guidance, which have been adopted by the military authorities without his concurrence. But there is, I believe, a third, and by no means a small, class who have been scarcely, if at all, represented in the recent discussions—those who, while they admit the existence of certain grievances, deny the overdrawn statements which have been vociferously put forward respecting the department, and while they freely acknowledge Mr. Hardy's exertions to remedy the just complaints, are of opinion he has left undone some things that he ought to have done, and done some injudicious acts which had been better left undone. I shall endeavour to take a dispassionate survey of the statements of both these parties, and to form some estimate of the nature and extent of the real grievances. But before doing so, it may be advisable, for the better understanding of the question, to take a brief retrospect of the state of the department during the last half-century.

Fifty years ago Sir James M'Grigor was at the head of an efficient and, upon the whole, a contented department. He was a man of great tact, urbanity, and firmness, and had very materially raised the status, both military and professional, of the officers under his control. Candidates for admission were numerous, and only two great grievances were brought much to notice. The first and greatest was the slowness of promotion, but this was a consequence of the reductions made at the end of the Peninsular war, was shared by all branches of the service, and was ultimately cured by lapse of time; the other was the exclusion of medical officers from military rewards and honours, which was removed by Earl Russell, if I remember rightly, and in a great degree owing to the persevering exertions of the late Sir Ranald Martin.

Unfortunately, as Sir James M'Grigor advanced in years, he, like many old men, not even excepting his great patron the Duke of Wellington, failed to see the necessity of advancing with the spirit of the times; and thus, while the profession in civil life was making rapid progress, in the army it was standing still. When, therefore, in 1851, he retired from office, he left the department in an unsatisfactory state of unpopularity and discontent. Candidates were few, and had also fallen off in quality. He was succeeded by Dr. (afterwards Sir A.) Smith. Under his rule the downward progress of the department went on rapidly. At last the Crimean war came, and with it the miserable collapse of the department. Of the causes of that break-down I shall say nothing: are they not written in the numerous Blue-books of that epoch, and in the Report on the Sanitary Condition of the Army presented to Parliament in 1858?

On the reorganisation of the department in 1859, in accordance with the recommendations of the Royal Commission, presided over by Sidney Herbert, Mr. Alexander was appointed Director-General in succession to Sir A. Smith. He had a most difficult task to perform. Suddenly called to the head of a large department, of the administration of which he had no previous experience, and in which he received no assistance from his predecessor in office, he had to select a considerable number of officers for the administrative ranks. That he should have made some mistakes, and that some of his selections should have proved unfortunate, was naturally to be expected; that there were so few was evidence, to those who had the means of judging, of the great care he had taken to discharge that duty conscientiously.

The Royal Warrant of 1859 introduced many very important changes into the department, and was conceived in a liberal and kindly spirit towards the medical officers. Some of these changes were made in the interest of the individual officers, such as the increase of pay and half-pay; the higher relative rank, carrying with it increased allowances and widows' pensions; promotion to surgeon-major at twenty years, irrespective of vacancies; promotion in the executive ranks by seniority in the service, instead of on the station; the abolition of the unjust system of deferred increase of pay for two years in certain cases on promotion; the establishment of the principle that medical officers should be entitled to the same honours as other officers of equal relative rank; the grant of good-service pensions and the appointment of honorary physicians and surgeons to Her Majesty. Other of the changes were introduced more with reference to the improvement of the department, and some of them were not very popular with the officers, but were manifestly in the interest of the public service. Of these may be noted the requirement of the double qualification from candidates for admission into the service, of competitive examination for admission, and of examination of assistant-surgeons before promotion; the establishment of the principle of selection in promotions to the administrative ranks; the compulsory retirement of executive officers at fifty-five, and of administrative at sixty-five. The Warrant was, on the whole, well received, and the increase of half-pay was deemed a fair compensation to the compulsorily retired—the *emeriti* of the department.

The Warrant gave general satisfaction to the medical officers, with the exception of those seniors who were passed over in the selection for promotion to the administrative ranks. But this state did not continue long. In a short time the military authorities began to tamper with the provisions of the Warrant, and the Field-Marshal Commanding-in-Chief, by a confidential memorandum, virtually cancelled the position of equality granted to the medical officers, by directing that under no circumstances should they be detailed for boards when senior to the military officers who were to be members with them; thus annulling their right to preside when a military officer of even much lower rank was present. I refrain from any comment on the manner in which the intentions of the Royal Warrant were thus circumvented, or the animus shown by the Horse Guards authorities. At a subsequent date (1st May, 1863), a Royal Warrant was promulgated, taking from the officers of all the civil departments and non-combatant branches of the military departments the title to the presidency of courts, committees, or boards. In 1867, the object of this Warrant, so far as regards medical officers, was effected in a more courteous manner by "granting them exemption from serving as members of all boards except medical boards." It is to be regretted that this mode of procedure was not adopted in the first instance.

In 1860, Dr. Gibson was appointed Director-General, in

the room of Mr. Alexander, who died. Discontent began to spread in the department, and a strong representation by the Royal College of Physicians, on the part of the medical officers of the army and navy, led to the appointment of a committee to consider their grievances. Founded upon its report, a Warrant was brought out in April, 1867, giving increased pay to all ranks, and granting a right to retire on half-pay after twenty instead of, as previously, after twenty-five years' full-pay service. During the period of Sir J. Gibson's rule, a very important question also came on for decision—the relative position of the medical officers of the British and Indian services, particularly as regarded the administrative ranks. He managed to secure for the department a fair share of these lucrative appointments in India, but coupled with a condition that no officer should be sent out in such a position who had not served three years in that country in the executive ranks. This has since given rise to much complaint, but there is good reason to believe that, had it not been conceded, the department would have been the losers to a serious extent.

In 1867, Dr. Logan succeeded Sir James Gibson, whose term of service as Director-General had expired. Under him the selection of officers to fill the administrative ranks was virtually in abeyance. The promotions, with one or two exceptions, were all by seniority. It was believed that this departure from the conditions of the Royal Warrant was the result of the interference on the part of the Field-Marshal Commanding-in-Chief, and it was in many respects most injurious to the interests of the department. Some officers were promoted who lacked administrative ability, and a considerable number who were not qualified to serve in India under the conditions above quoted. This Horse Guards interference has consequently been one of the causes to which the succeeding difficulties in conducting the service has been due. Sir G. Logan's rule did not make the service more contented or more popular than that of his predecessors. He made certain recommendations which, in 1873, were embodied in a Royal Warrant, but the chief alterations in it were a change in the designation of the different ranks; the title of assistant-surgeon being abolished, the surgeon under previous Warrant being now styled surgeon-major; and the administrative ranks having the "inspector" converted into "surgeon." These changes were received with utter indifference by the department, the matters affected being, if considered grievances at all, deemed to be only sentimental. But a clause was introduced which injuriously affected the surgeon-majors. Forage, which, by the Warrant of 1859, had been granted according to their relative rank, was now restricted to such number of horses as were necessarily kept by them for duty. It is true that this restriction had been introduced in the previous year by Mr. Cardwell, but it was done then in a most illegal manner by a War Office circular over-riding a Royal Warrant; it was now legalized, but in common equity the restriction should have been made to apply only to officers entering the service after April 1st, 1873.

Sir G. Logan, before leaving office, had also prepared the scheme known as the "unification" of the department. It was proposed by this to convert the department into a special scientific corps, analogous to the Royal Engineers, and necessarily to destroy the regimental system. This has since been carried out to the full extent, and has been one of the causes of much discontent. In 1874 Dr. Muir became Director-General on the retirement of Sir G. Logan, and he still continues in office. He has restored the system of promotion by selection, in opposition to the opinion of the Horse Guards, and has brought into operation the unification system as recommended by his predecessor.

In April, 1876, another Royal Warrant was promulgated, by which the age for compulsory retirement of administrative officers was reduced to sixty instead of sixty-five. Promotion to the rank of surgeon-major was granted after twelve years' full-pay service, and limited service for ten years, except as regarded six per cent. of those hereafter entering the department, was introduced. This scheme is understood to have originated with Mr. Hardy, and if not opposed by, at least not to have secured the support of the Director-General. Subsequently an order was brought out relieving all medical officers from contributions to the mess and band funds of those regiments to which they are attached for duty, but of which they are no longer a component part.

I have given these details because I have deemed it right to show that there has been no disinclination on the part of the Secretaries of State for War to consider the grievances of the medical officers. Four Royal Warrants in eighteen years ought, surely, to be enough for any department. I have also endeavoured in them to trace the origin of some of the grievances now made the subject of complaint. To these grievances I will now direct attention. One of the first of these is the enforcement of the rule of three years' service in the executive ranks in India before an officer becomes eligible for employment in the administrative ranks in that country. This has hit some officers very hard, but it should not be forgotten that it was an arrangement by which a large number — I believe twelve—of additional appointments were secured to the department. It is, however, to be regretted that this condition was not embodied in the Royal Warrants of 1867 and 1873, or, at least, published for the information of the service in the War Office circular. It is now well known, and, I presume, the Director-General will be found anxious to afford to all officers who apply to him an opportunity of performing the qualifying term of service. The very small number of administrative appointments abroad, exclusive of India, must prevent the promotion, unless under very special circumstances, of officers who are not available for service in that country; otherwise there would soon be two classes of officers—the one condemned to perpetual banishment in India, the other enjoying all the advantages and pleasures of nearly continuous home service. A strictly kept roster for foreign service, though it may be unpleasant to a few individuals, is an imperative necessity in the medical department.

Another grievance is the abolition of the appointments to regiments, and the consequent loss to a certain portion of the medical officers of those social enjoyments and agreeable associations which attached to their position as regimental officers. This, however, has been forced upon the authorities by the necessities of the service and the great changes which have taken place in our military organisation. With the much higher rates of pay and allowances enjoyed by medical officers, it could hardly be expected that the old system of having two or three medical officers in each regiment would be continued; in fact, there was not work enough to keep them fairly employed. If it were proposed to continue the later system of one only to each corps, this was open to the objection of preventing a fair distribution of foreign service among the officers, and opening a door for partiality and favouritism on the part of the Director-General and the military authorities. The manner in which the change of system was carried out was open to objection, and that which was understood to be proposed by Sir G. Logan, of granting five years' tenure to all officers attached to regiments at the date of the new regulation being adopted, would have been much preferable, and would have removed this ground of complaint. Both the department and the public have, however, been gainers in some very important particulars by the adoption of the unification system.

Another cause of loud complaint has been the limited amount of home and sick leave granted to medical as compared with regimental officers. But it must not be forgotten that in this respect they are on the same footing as paymasters and the commissariat. They are very differently placed from regimental officers in this respect—that the duties of the latter can be divided among their brother officers, but it is difficult to find anyone to take the duty of a medical officer. The department is necessarily limited in numbers, and no other branch of the service can furnish a substitute, nor, on foreign stations at least, is it possible to obtain assistance from the civil branch of the profession. This is one of the grounds on which higher pay is granted to medical officers, and they can hardly expect to be in all respects treated as the officers who are, in point of pay, less favourably situated.

The withdrawal of forage allowance from the surgeon-major is, I think, a fair cause of complaint in the case of officers who entered the service before 1873.

With this exception it would appear that most of the causes of complaint have arisen in a great measure from the necessities of the service, and from the great general changes which have taken place in the organisation of the army, but that they have been carried out in such a manner

as to inflict uncalled-for hardship, and occasion unnecessary offence. This is now a matter of the past, but may serve as a lesson for the future. The department has a right to some guarantee that the terms of service laid down by Royal Warrant shall not be set aside either by confidential memorandum from the Horse Guards, or by War Office circular, and that reductions in the allowances so granted shall not be retrospective, but if embodied in a warrant, shall be applicable to those only who enter after its promulgation, unless some equivalent advantage be granted in compensation, as in the case of the Royal Warrant of 1859. They have also a right to expect that all conditions affecting their interests shall be made known to them through some such channel as the General Orders or War Office circulars. That the system of regimental appointments can now be adopted, or the conditions attached to administrative appointments in India be abolished, is simply impossible. But it must not be forgotten that while the changes connected with these two points have wrought some injustice or hardship to individuals, the department has gained greatly by the abolition of contributions and subscriptions in the one case, and a large addition to the lucrative appointments in the other. Facilities might be granted to the officers of the unified department to establish messes at those stations where a sufficient number of medical officers are employed, and in this respect a good precedent could be found in the corps of Royal Engineers. It would also be advantageous to permit exchanges between medical officers when these are desired, and could be effected without detriment to the service, and under such restrictions as to money payments as would prevent the gradual introduction of a modified system of purchase.

I have not entered on, nor do I propose to discuss, Mr. Hardy's scheme of limited enlistment for the department. He adopted it in the hope of inducing candidates to come forward; whether it will have that effect remains to be seen. It is entitled to a fair trial. It cannot be considered as among the grievances of the department. Those who accept its terms do so of their own free will. Meantime the Warrant has given such an amount of promotion to the existing officers of the department as ought to satisfy even the most discontented. There has also been an increase of rank of the administrative officers, carrying with it the allowances of the respective ranks. The duties of a non-medical character, of which medical officers so justly complained, have been transferred to officers of the Army Hospital Corps; and there cannot be a doubt that the Medical Department now occupies a position very different from any it ever did before in point of responsibility, power, and independence. It takes its stand as a distinct scientific branch of the service, with its future in its own hands; and to this end, through good report and evil report, the present Director-General has, I believe, steadily laboured, in the teeth of all opposition, and apparently unsupported even by members of the department and the outside profession.

Correspondence.

"Audi alteram partem."

ON THE PRESENCE OF ARSENICUM IN SOME SAMPLES OF FURNISHING MATERIALS.

To the Editor of THE LANCET.

SIR,—About a month ago Dr. Owen Rees called public attention to the presence of arsenic in certain materials, and gave one marked case which had come under his notice. Some weeks before the appearance of Dr. Rees's letter I had occasion to examine some furnishing materials, and the results were so very exceptional that I embodied them in a letter intended for publication in THE LANCET. This letter was subsequently laid aside, as I knew that chemists had from time to time called public attention to similar cases. However, from certain things that have recently occurred, it appears that the subject is one of great public interest, and this, I trust, will be a sufficient excuse for my bringing the matter once more under public notice. During the month of March some samples of furnishing materials were sent me for examination, in consequence of illness in the house where they had been used. I understand that some members of the family had suffered for some time from nausea and nervous depression. The materials were two samples of chintz curtains, a piece of chintz lining, and a piece of Brussels carpet. The lining was of a uniform light-green colour, and the bright colours of the two samples of chintz were printed on a similar colour, only slightly lighter in tint. The Brussels carpet was of the ordinary kind, with green of different shades for the predominating colour. On examination the carpet was found to be free from arsenicum, but the two samples of chintz and the lining were found to contain large quantities of the element. One of these two kinds was used in the bedrooms, the other being used in the drawing-room. The lining was used in all the various rooms. The amount of arsenic in the bedroom chintz and the lining was in each case determined. Each square yard of the former contained arsenicum in the form of an arsenate equal in amount to $45\frac{1}{10}$ grains of white arsenic ($As_2 O_3$). The lining was worse. Each square yard contained arsenicum in the form of an arsenate equal in amount to $20\frac{3}{10}$ grains of white arsenic. Each was perfectly free from copper. Chromium and iron were present in large amount; and, from the quantity of the mixed chromic and ferric oxides obtained from the chintz, I have no doubt that the colour of the lining and the ground colour of the chintz were in each case due to a mixture of chromic and ferric arsenates. I have been furnished with the numbers representing the amount of chintz and lining used in my client's bedroom, and, on making the necessary calculations, I find that there was arsenicum present equal in amount to 26 oz. of white arsenic. The capacity of the bedroom is about 2800 cubic feet. This is an enormous quantity of arsenic to have in such a room in the form of the colouring matter of curtains. The coloured powder, being glazed on the material, is apt to be removed by many trifling causes and to be disseminated through the air of the apartment. Such a powder well merits the epithet "devil's" dust. After the amount of arsenic had been estimated, I called on one of the principals of the house which had supplied the goods. He assured me that they "were not aware that the chintz lining contained this substance, and they did not test the articles which they sold. The lining had been known and sold for at least *twenty years*. The 'bright colours' were those which they suspected." Now it is well known to chemists that arsenic acid is used in the preparation of the "bright colours" from the substances existing in coal-tar. Such colours do not necessarily contain arsenicum in any form, and ought not to contain it if the colours have been prepared with due care. Yet I fear that many fabrics are to be found in the market which contain very large quantities of this substance. Such being the case, it is most important for the medical man, in the treatment of disease, to be aware of the possible occurrence of the element in such materials, more particularly when it is in a state so likely to contaminate the atmosphere of an apartment as the colouring matter of these curtains. I venture to think that one of the chief objections to the indiscriminate use of these arsenical compounds is, that their true character is rarely known, and therefore any bad effects which they may give rise to are so liable to be attributed to other causes. This case cannot possibly be an isolated one, because, on the evidence of the seller, the material has been used for twenty years. What an enormous quantity of arsenicum a large house could scatter broadcast during that time! The light-green colour may be most desirable from an æsthetic point of view, and there would not be the slightest objection to it on sanitary grounds, were it not produced by excessively poisonous metals. I presume that there would be no difficulty in producing such a colour without the use of arsenicum; and, if this result is possible, manufacturers ought not to excuse themselves on the score of necessity and public demand. In conclusion, I may remark that the use of a mixture of the arsenates of iron and chromium for producing a green colour is not generally known, even to chemists. Scheele's green (arsenite of copper) has long had a bad reputation, and, speaking chemically, is an entirely different substance.

Yours faithfully,

WM. FOSTER, B.A., F.C.S.,
Lecturer on Chemistry, Middlesex Hospital Med. College.

July 27th, 1877.

A DISCLAIMER.

To the Editor of THE LANCET.

SIR,—My attention having been called to an advertisement of the Vin de Baudon, in which my name is mentioned in such a manner as to beget the idea that I had employed this compound, that to its employment I had ascribed the recovery of a patient from empyema, and that I recommended its use, perhaps you will kindly permit me to state, in answer to many communications on the subject, that the wine was prescribed by the resident medical officer of the London Hospital; that in my opinion its use exerted no favourable influence upon the patient's recovery; that I have never prescribed the preparation; that the garbled extracts from the report of the case, neither written nor revised by me, used by the advertisers to promote the sale of their commodity, have been published without my knowledge; and that the continued use of the advertisement, as it now runs, is contrary to my judgment of what is right.

I am, Sir, your obedient servant,

ANDREW CLARK, M.D.,
4th August. Physician to the London Hospital.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND. — The following gentlemen, having passed the required examination for the diploma, were duly admitted Members of the College at a meeting of the Court of Examiners on the 2nd inst.:—

Birdwood, Roger Alan, Bombay.
Burgess, William Milner, L.S.A., Harlesden.
Cardew, George Arthur, L.S.A., Cheltenham.
Chubb, William Lindsay, Torpoint, Cornwall.
Cobbin, William Ingram, Torrington-square.
Davy, Henry, Ottery St. Mary, Devon.
Gardner, John Twiname, Ilfracombe, Devon.
Hall, Chas. Ross, L.R.C.P. Edin., Tottenham.
Langdon, John Winkley, L.S.A., Chester.
Paddison, Edmund Howard, Bayswater.
Poland, James Harry, L.S.A., Blackheath.
Pope, Charles Ernest, Chilforme, Dorset.
Prosser, Thomas Gilbert, L.S.A., Monmouth.
Smyth, Albert C. R., L.R.C.P. Edin., Dublin.
White, Robt. Godfrey, L.S.A., Chinkiang, China.

Of the 206 candidates who presented themselves at the recent examinations for the Membership of the College, 133 were successful and obtained their diplomas; 29 passed in Surgery, and when qualified in Medicine will be admitted Members; and 44 failed to satisfy the Court of Examiners, and were referred for six months' further professional study. Fourteen candidates who passed in Surgery at previous examinations, having subsequently obtained a medical degree or licence recognised by the College, were also admitted Members.—This is the last examination for the Membership for the present session.—The Museum and Library of the College will be closed as usual during the month of September for the necessary repairs and general cleaning.

APOTHECARIES' HALL. — The following gentlemen passed the examination in the Science and Practice of Medicine and received certificates to practise on the 2nd inst.:—

Eastwood, Lewis, North-road, Darlington.
Temple, Thomas Cameron, Doddington-grove, Kennington.
Young, Alex. Stewart Ward, Chandos Villas, Clifton.

The following gentlemen also passed the Primary Professional Examination:—

Evan Alban and Henry Chester Nasse, St. Bartholomew's Hospital; Herbert B. Blackburn, Guy's Hospital; John Swindells Dykes, Queen's College, Birmingham; Ernest W. W. Farmer, University College.

The following is a list of the new Court of Examiners of the Society of Apothecaries, viz.:—James Parratt, M.D.; Robert Hunter Semple, M.D.; Charles Taylor, M.D.; John Charles Thorowgood, M.D.; John Sherwood Stocker, M.D.; Robert Fowler, M.D.; Henry Bullock, F.R.C.S.; Joseph Samuel Lavies, M.D; James Charlesworth Copland, M.R.C.S.; John Randall, M.D.; William Frederick Richardson Burgess, M.D.; and Charles Astley Wakefield, M.R.C.S. Thomas Rivington Wheeler, F.R.C.S., has been appointed secretary, in place of Dr. R. H. Robertson, deceased.

ARMY MEDICAL SERVICE. — The following is a list of candidates who were successful at both the London and Netley examinations, recently held, having passed through a course of instruction at the Army Medical School, Netley:

	Marks.		Marks.
*Mullen, J. J.	6718	Kenny, W. W. ...	3895
Murphy, F. H. S. ...	5098	Ellis, P. M.	3772
Johnston, W. T. ...	4656	O'Sullivan, P. J. ...	3758
De Canx, F.	4595	Hogan, E. M. A. ...	3671
Browne, A. W.	4193	Irwin, A.	3310
Hodson, R. D.	4138	Kearney, T.	3193
Powell, C. K.	4075	McCarthy, W. ...	2831
Kirkpatrick, H. C. ...	4038	Brodie, J. F.	2773
Armstrong, J.	3970		

* Gained the Herbert Prize.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS, EDINBURGH. — DOUBLE QUALIFICATION. — The following gentlemen passed their final examinations and were admitted L.R.C.P. Edin. and L.R.C.S. Edin. during the recent sittings of the Examiners:—

Baxter, Edward John, Middlesex.
Balmanya, Antonio, Cuba.
Brannigan, Henry Cooke, County Mayo.
Campbell, Peter, Crieff.
Crane, Alfred Wyatt, France.
Durand, Rodolphé, Mauritius.
Dedrickson, Robert Forest, Dublin.
Glaister, John, Lanark.
Graham, Andrew, Forfarshire.
Greasley, Joseph, Melton Mowbray.
Howard, John Albert, Bagborough.
Hartley, Harrison, New Malton.
Jenkinson, Alfred Samuel, Yorkshire.
Mackenzie, William Gillespie, Belfast.
Maxton, Laurence, Calcutta.
Macnaught, John, Glasgow.
Murray, Hugh, Bonar Bridge.
Miller, Alfred Henry, Rochester.
Macgregor, Peter, Perthshire.
Naismith, Fergus Charles, Bengal.
Noad, Hartley Innes, Herne Hill.
Reckitt, John Denis Thorpe, Hull.
Tait, Richard Knox, Eyemouth.
Vanes, Arthur Bayly, Worcestershire.
Walker, Henry Bournes, Nenagh.

The following gentlemen passed their first professional examination at the same time:—

William George Mawbry, Northampton; John Jardine Dunlop, Port William; Robert Roberts, North Wales; Duncan William Francis Chisholm, Novia Scotia; Frank Augustus Coward, Cape of Good Hope; William Edward Hayes, Wexford; Hubert Lindsay Miller, Tasmania; Allan Grant Mackenzie, Strathspey; George Cuscaden, Wexford; Edwin Weston, India; William Abraham Dartnell, Rochester; Joseph William Townsend Anderson, India; Henry Richard Powell, South Pacific; Albert Victor Wheeler, Dublin; William Campbell, Caithness; Alfred Ernest Scanlan, Chester; Johnson Herbert, Whitby; George Dixon Mitchell, Coldstream; John Templer Crosbie Conry, Roscommon; John Yellowlees Tant, Argyleshire; William Cornfoot Philp, Kirkcaldy.

ROYAL COLLEGE OF SURGEONS, EDINBURGH.—The following gentlemen passed their final examination and were admitted Licentiates of the College during the recent sittings of the Examiners:—

Baldwin, Edmund St. George, Toronto.
Croudace, James Henry, County Durham.
Duncan, George, Perthshire.
Gordon, Richard, County Sligo.
Heornlé, Edward Frederick, India.
Hodgson, William Bacon, Middlesex.
Holmes, David, Malta.
Jervis, Henry Prace, Bombay.
Khambata, Hirji Jehangir, Bombay.
Koyaji, Beramji Nasarvanji, Bombay.
Lauder, William, Port-Glasgow.
Mickle, Arthur Wm. Thomas Flintoff, Yorkshire.
M'Nicoll, Edward Day, Liverpool.
Nariman, Kaikhosro Sorabji, Surat.
Norcop, Percy Grant Hickson, Plymouth.
Parker, James, Indian Ocean.
Reporter, Manockjee Eduljee, Amrolee, Surat.
Smith, James Alexander John, Stornoway.
Smyth, Albert Charles Butler, Dublin.

During the same period the following gentlemen also passed their first professional examination:—

John Caithness Innes, Marykirk; John Cameron Dall, Bedlington; James Alexander John Smith, Stornoway; Thomas Charles Walker, Linlithgowshire.

THE library of the Royal Medical and Chirurgical Society will be closed for one month from Monday, August 13th, to Wednesday, Sept. 12th (both days inclusive).

MEDICO-PSYCHOLOGICAL SOCIETY. — The "William and Samuel Tuke prize," offered by some of the descendants of the founder of the York Retreat for the best essay on a specified subject of insanity, has been awarded by the above Society to Edward C. Spitzka, M.D., of New York City.

DR. SAUNDERS's salary as medical officer of health for the City of London has been increased from £500 to £700 per annum.

MR. J. N. TERRY, of Bradford, has received a legacy amounting to £1000 free of legacy duty, under the will of the late John Clarke, Esq., of Oaklands, Bradford, "for professional services."

THE NEW LIVERPOOL EYE AND EAR INFIRMARY.—The Committee, having invited tenders for the new infirmary, have selected as the most eligible those of Mr. C. O. Ellison. The building is to be erected in Myrtle-street, and will combine what has proved good in existing hospitals with many other improvements suggested by experienced surgeons.

BEQUESTS, &c., TO MEDICAL CHARITIES.—The late Mrs Brocas, of Pembroke-road, Dublin, has left £200 to the Meath Hospital and County of Dublin Infirmary, for the support of a bed to be entitled the "Brocas Bed;" also £250 to the Adelaide Hospital, and £100 each to Baggot-street and Mercer's Hospitals. The late Surgeon Wilson has bequeathed a reversionary interest in some shares to St. Mark's Ophthalmic Hospital, Dublin, the dividends of which at present yield £200 per annum. The building fund of Mercer's Hospital, Dublin, has received £100 from "Anonymous," £50 from Mr. Kershaw, and £30 from Mrs. Hotchkisspер.

PRESENTATIONS.—The "Dunoon Herald" contains an account of the presentation to Dr. John Reid, R.N., J.P., of Fairybank-villa, Dunoon, of a handsome brougham and set of harness. This must be very pleasant to Dr. Reid. It is also pleasant to us to record incidents which show the esteem in which members of our profession are held in their respective neighbourhoods.—At the annual meeting of the medical staff of the Great Western Railway Provident Society, held at the Lion Hotel, Shrewsbury, on Tuesday, August 7th, Dr. Cooper, medical officer of the Great Western Railway, the president, was presented with a very elegant and massive silver tea and coffee service, as a mark of the high esteem and great personal regard held towards him by the staff.

Medical Appointments.

ATTWATER, A. W., L.R.C.P.Ed. & L.M., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer and Public Vaccinator for the Whickham District of the Gateshead Union, vice Blackett, deceased.

BROWN, W. P., L.R.C.P.Ed., L.R.C.S.Ed., L.S.A.L., has been appointed Visiting and Junior House-Surgeon to the General Infirmary, Macclesfield.

CARLTON, T. B., M.R.C.S.E., L.S.A.L., has been appointed House-Surgeon to the Royal Berks Hospital, Reading, vice Armstrong, resigned.

DOWSE, R. H., M.B., B.Ch., has been appointed Assistant-Surgeon to the Newport (Mon.) Odd Fellows' Medical Association, vice Irvin, resigned.

DUNLOP, J., M.D., F.F.P.S.G., has been reappointed a Surgeon to the Royal Infirmary, Glasgow.

ILIFFE, C. W., L.R.C.P.Ed., M.R.C.S.E., has been appointed Medical Officer to the Coventry Union Workhouse, vice Bicknell, resigned.

LANGTON, H., M.R.C.S.E., L.S.A.L., has been appointed Resident House-Surgeon to the Brighton and Hove Dispensary, vice Bryan, resigned.

LEES, D. B., M.D., M.A., M.R.C.P.I., has been appointed an Assistant-Physician to the Charing-cross Hospital, vice Powell, resigned.

LYDDON, C., L.R.C.P., M.R.C.S.E., L.S.A.L. & L.M., has been appointed Surgeon to the Railway Carriage Works, Foresters, Odd Fellows, United Free Gardeners, and various Collieries, at Oldburgh, Birmingham; also Medical Referee to several Insurance Societies, vice Dempsey, resigned.

MCCLOSKY, J. H., L.R.C.S. & L.M., L.S.A.L., has been appointed Colonial Surgeon, Malacca, Straits Settlements.

MACKINTOSH, A., M.D., L.F.P.S.G., has been reappointed Medical Officer of Health for the Dronfield Urban Sanitary District, Derbyshire.

MAGILL, J., M.D., L.R.C.S.E., has been appointed Resident Medical Officer to the Manchester Workhouse, Crumpsall, vice Gowland, resigned.

MORGAN, W., Ph.D., F.C.S., has been appointed Public Analyst for the County of Carmarthen: 15s. per analysis, and £2 12s. 6d. for each statutory quarterly report.

O'FLYNN, P., L.R.C.P.Ed., L.F.P.S.G., has been appointed Medical Officer, Public Vaccinator, &c., for the Ballyduff Dispensary District of the Lismore Union, co. Waterford, vice Barry, resigned.

PALMER, C., L.R.C.P.Ed., M.R.C.S.E., has been appointed Medical Officer for the Barton District of the Burton-on-Trent Union, vice Prockter, resigned.

PARKS, C. H., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer of Health for the St. Columb Major Rural Sanitary District, Cornwall.

PEPPER, A. J., M.B., B.Sc., F.R.C.S.E., has been appointed Surgical Registrar and Demonstrator in the Class of Practical Surgery at University College Hospital.

PERRY, F. F., M.R.C.S., L.R.C.P.L., has been appointed Demonstrator of Anatomy to the Westminster Hospital, vice Ottley, resigned.

PERRY, R., M.D., F.F.P.S.G., has been reappointed a Physician to the Royal Infirmary, Glasgow.

ROE, W., M.D., F.R.C.S.I. &c., has been appointed Professor of Midwifery to the Royal College of Surgeons in Ireland.

SPEAR, J., L.R.C.P.Ed., M.R.C.S.E., has been reappointed Medical Officer of Health for the South Shields Urban Sanitary District for one year.

SWANZY, H. R., M.B., F.R.C.S.I., has been appointed Professor of Ophthalmic and Aural Surgery at the Royal College of Surgeons in Ireland, vice Wilson, deceased.

WISEMAN, J. G., F.R.C.S., has been appointed Certifying Factory Surgeon for Ossett, vice W. W. Wiseman, M.R.C.S., resigned.

WOODCOCK, R. F., M.R.C.S.E., has been appointed Junior House-Surgeon to the Royal Albert-Edward Infirmary and Dispensary, Wigan, vice Clapp, resigned.

Births, Marriages, and Deaths.

BIRTHS.

ANNANDALE.—On the 2nd inst., at Salisbury-green, Edinburgh, the wife of Thomas Annandale, F.R.C.S.Ed., of a daughter.

BROWN.—On the 4th inst., at Bartholomew-road, Kentish-town, the wife of Andrew Brown, L.R.C.P.Ed., of a daughter.

DALY.—On the 7th inst., at Queen's-road, Dalston, the wife of Frederick H. Daly, M.D., of a son.

DUNLOP.—On the 3rd inst., at Carlton-place, Glasgow, the wife of James Dunlop, M.D., Professor of Surgery, Anderson's University, of a son.

HARDWICKE.—On the 4th inst., at Parkfield House, Sheffield, the wife of Herbert Junius Hardwicke, M.D., of a daughter.

HOPWOOD.—On the 2nd inst., at Warley, Essex, the wife of Edwin J. Hopwood, M.R.C.S.E., Surgeon-Major, Army, of a son.

LONGHURST.—On the 2nd inst., at Wilton-street, the wife of Arthur E. T. Longhurst, M.D., of a daughter.

NASH.—On the 4th inst., at Westgate-on-Sea, the wife of Edmund Nash, M.D., of a son.

SMITH.—On the 3rd inst., at Croydon, the wife of Walter H. M. Smith, L.R.C.P.Ed., of a son.

SMITH.—On the 1st inst., at Eastbourne-terrace, Hyde-park, the wife of William Wilberforce Smith, M.D., of a son.

WINKFIELD.—On the 1st inst., at Shirley, Southampton, the wife of W. B. Winkfield, L.R.C.P.Ed., of a daughter.

MARRIAGES.

ANDERSON—DUNLOP.—On the 25th ult., at St. Paul's Church, Edinburgh, by the Rev. J. H. Stork, M.A., John Anderson, Surgeon-Major, Army Medical Department, to Jessie Usher, second daughter of the late James Usher Dunlop, Esq.

MACFEE—CROSS.—On the 2nd inst., at the Parish Church, South Hackney, by the Rev. Ridley Daniel Tyssen, John Macfee, M.D., to Anne Eliza, eldest daughter of the late John Cross, Historical Painter.

SHEILS—SMITH.—On the 26th ult., at St. John's, Bradford, by the Rev. R. W. Loosemore, Rural Dean, John Sheils, M.D., of Liversedge, Yorks, to Elizabeth Smith, of Horton, Bradford.

SWAYNE—CORMACK.—On the 8th inst., at the British Embassy, Paris, by the Rev. James M. Laycock, Colonel James Dowell Swayne, of H.M. Bengal Staff Corps, to Mary Morris, daughter of Sir John Rose Cormack, M.D.

WOOD—HENRY.—On the 7th inst., at Holy Trinity Church, Roehampton, by the Rev. L. S. Stanley Clarke, B.C.L., Prebendary of Chichester and Rector of Bexhill, Sussex, assisted by the Rev. W. W. Kelly, M.A., Curate of Hove, William Edward Ramsden Wood, M.A., M.B., eldest son of William Wood, M.D., of Harley-street, and The Priory, Roehampton, to Alice Louisa, youngest daughter of James Henry, Esq., of Blackdown, Sussex, formerly of the 72nd Highlanders.

DEATHS.

BROADBENT.—On the 5th inst., at East Gate, Lincoln, Edward Farr Broadbent, F.R.C.S.E., aged 63.

CARMICHAEL.—On the 24th May, at Chefoo, China, John Richard Carmichael, M.D., F.R.C.S.E., &c., of typhus fever, contracted while attending the poor sick Chinese refugees from the famine-stricken districts in the Shantung Province, aged 39.

HANDY.—On the 28th ult., at Killala, Samuel Wesley Handy, L.K.Q.C.P.I., aged 37.

HANKS.—On the 23rd June, at Coconada, East Indies, William Hanks, M.R.C.S.E., Surgeon, Indian Civil Service, aged 35.

LAWTON.—On the 4th inst., at Rochdale, James Lawton, M.R.C.S.E., aged 63.

MAY.—On the 7th inst., at his residence, Bruce-grove, Tottenham, Edward Curtis May, F.R.C.S., aged 80.

MULLANE.—On the 30th ult., at Chexbores, Switzerland, Timothy Mullane, M.D., Surgeon, Army, late of the 63rd Regiment.

SIMPSON.—On the 30th ult., at Alphington, Devon, William Simpson, Surgeon, aged 76.

[N.B.—*A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*]

BOOKS ETC. RECEIVED.

Transactions of the Odontological Society of Great Britain. Jun.
Hugh Croskery: The Gospel of the Kingdom.
Medicinal Plants. Part XXIII.
E. Lund on Internal Urethrotomy.
Dr. J. L. W. Thudichum: Pathology of the Urine.
C. Higgens: Hints on Ophthalmic Out-patient Practice.
St. Thomas's Hospital Reports. Vol. VII.
H. E. Roscoe and C. Schorlemmer: A Treatise on Chemistry.

Notes, Short Comments, and Answers to Correspondents.

FORGING DEATH CERTIFICATES.

THERE are satisfactory indications that Government and the authorities of the Registration Office are beginning to realise the importance of death certification, and of prosecuting with vigour those who tamper with it. A medical student, named William M. Irvine, was indicted on the 30th of July at the Leeds Assizes, before Mr. Justice Manisty, for having unlawfully and wilfully forged a certificate, purporting to be the certificate of one John Shearwood Roberts, as to the cause of death of one Harriett Haigh, on the 2nd of August, 1876. Two other charges of a similar nature were made, and twenty-three other certificates were put in by Mr. Campbell Foster, who, with Mr. H. Thomas, prosecuted. Mr. Foster stated that the prosecution was instituted by the Government, and he thought the jury would agree with him that the case was one which fully justified the steps which had been taken. Mr. Irvine was a medical student, who—his counsel, Mr. Blackburn, said—had not passed his final examination, but still was well qualified to practise. He had been assistant to Dr. Mason, of Sheffield, and in that capacity had practised at Stourbridge. On leaving the service of Dr. Mason, he applied to Dr. Roberts, of Sheffield, to act as his assistant. Dr. Roberts absolutely declined the services of the defendant. Notwithstanding this, Mr. Irvine proceeded to practise and to fill up certificates in Dr. Roberts's name, which the registrar thought were the certificates of Dr. Roberts. The jury found the prisoner guilty, and the judge spoke in severe, but not too severe, terms of the offence that had been committed. He said the defendant had committed forgery after forgery. His crime was one of the deepest dye, and not surrounded by any mitigating circumstances. He was sentenced to twelve months' imprisonment. The most unsatisfactory part of the case was the argument for the defence, which we shall not further characterise, as it did not mislead either judge or jury. Let us hope that this is only the beginning of a system of prosecutions on the part of the Government that will tend to make the certification of death real and effective.

Mr. Mellodew.—We do not name special surgeons.

ARMY MEDICAL DEPARTMENT.

To the Editor of THE LANCET.

SIR,—I agree with much, if not all, in a letter signed "A Medical Officer" in your last number. There is no doubt that the regimental system is dead, at least as it used to be, and there is no good mourning over it. Perhaps for comfort we shall never see its like again, and it is only after we have lost it that many have appreciated what it was. With all its advantages, however, there is hardly any doubt that medical officers did not under that system take, or have accorded to them, the position that relative rank should have insured, if it meant anything, except choice of quarters and pay. A combatant officer had his position in right of his rank, if he did not disqualify himself for it. A medical officer had to force his position; but let that pass. We have done with the regimental system, it seems, for the present at least; but along with its abolition have been brought in changes that had, as far as I can see, no necessary connexion with the doing away with regimentalism. First, with respect to exchanges. This can have had no possible connexion with the change, as it is obvious to common sense that two men could exchange as easily on the staff as from one regiment to another, or from the staff to a regiment; and there is no doubt that this, as it seems to me, needless prohibition has caused great discontent, and it has never been explained what was the use of the prohibition. As to saying that some men who have been allowed to exchange have subsequently been invalided, it is simply childish, as a sound man who likes India is far less likely to be invalided than a sick man who exchanges to avoid it. One result of the continued prohibition will perhaps be, that efforts will be made to prove to Government the pecuniary advantages of separating the Indian and British Medical Services, and of handing over to the former all the medical duties in India, which will cost the British service all the lucrative appointments in that country. Besides this, any discontent in the department reflects itself outside, and reduces the quality of candidates, and I much doubt if any superiority of organisation, or what not, will compensate for deficient quality in what I may perhaps be allowed to call the raw material. I am inclined to think that the department might be rendered pretty well contented by a few changes. Allow exchanges, alter the rules about sick and ordinary leave, give forage, &c. Why should it not be done? Why not allow A. to go to India if he likes, and B. to stop at home if he wishes it, instead of having two discontented servants? As to efficiency, I am inclined to think that a man is inefficient in direct proportion to his foreign service. He that has been long abroad has been long removed from the centres of knowledge; but let that pass. A certain number of men want a few certain things. Granting these to them can do no possible harm to the service. Why not do it?

Yours &c.,

August 2nd, 1877. COMMON SENSE.

"HYDRATED OIL."

Dr. G. Overend Drewry thinks he has made a discovery as to the assimilation of fats in certain diseases. We dispute neither the discovery nor its importance. But can Dr. Drewry not find a better way of announcing a medical discovery than by publishing it in little pamphlets for indiscriminate circulation? If he wants the value of his suggestions tested by the profession, he must know that it is a very circuitous and doubtful way of procuring its assistance by asking for it in the above pamphlet, which looks more like an advertisement of the writer than a grave scientific statement, and which is unworthy of a graduate of St. Andrews and a member of the Pathological Society.

"EUCALYPSINTHE."

THE *Pall Mall Gazette* states that a new liqueur called "eucalypsinthe" has been manufactured from the leaves of the eucalyptus. The valuable properties of an infusion of the leaves as a febrifuge have been long known and appreciated, especially by residents in Algeria, where the eucalyptus has been extensively cultivated with beneficial results; and Dr. Miergue, a colonial surgeon, has now succeeded, after many experiments and much patient research, in distilling from the leaves a liqueur which, although exhilarating and grateful to the palate, is not only absolutely harmless, but possesses also many useful medicinal properties. A correspondent of a French paper, who has made acquaintance with the new beverage in Marseilles, where it is, it seems, already largely manufactured and consumed, predicts that within six months it will become popular throughout France, and will everywhere take the place of absinthe—the "green muse" which has temporarily inspired, only afterwards to stupefy and kill, so many of the most talented of French writers and poets. The patent taken out by Dr. Miergue for the manufacture of eucalypsinthe has been conceded by him to the house of Bessède fils, of Marseilles, who have already erected extensive buildings for its distillation.

A CASE IN MEDICAL JURISPRUDENCE AT THE ANTIPODES.

To the Editor of THE LANCET.

SIR,—Thinking that the enclosed brief account of a post-mortem examination of the body of a girl, in a high state of decomposition, who had been brutally ravished and murdered, might prove not uninteresting to some of your readers, I herewith send it to you for publication in your columns. The evidence leading to the conviction of the prisoner charged with the offence was circumstantial throughout, as no one saw him commit the deed. Consequently skilled, or rather qualified, medical evidence as to the mode of death &c. was of the greatest importance to complete the chain. Without this medical evidence, it was thought, the prisoner, who has since his conviction confessed to the rape and murder, would undoubtedly have got off scot free.

On the 20th of February last I was asked by the police magistrate of Gulgong, on behalf of the Government, to proceed to a township of New South Wales, distant about 120 miles, and called Coonabarabraw, for the purpose of making a post-mortem examination of the body of a girl, aged thirteen, who had been found dead in the bush, and evidently brutally murdered under revolting circumstances. The police magistrate, who was also coroner, was desired to go too to hold the inquest on the body. So we journeyed together in a buggy with two horses, and were accompanied by a mounted trooper as an escort. The journey was long and tedious, occupying two long days, as the roads were far from being good. The weather was extremely hot, the temperature going up as high as 108° in the shade, and 130° in the sun, and, besides, a hot wind was blowing in our faces, rendering the journey still more fatiguing to our panting animals, who kept toiling along the dusty track at a steady pace. Arrived at our destination, we learned further horrible details of the murder. The poor girl had evidently been ravished, and afterwards murdered, as her body was found with a rope round her neck, tightly tied, and her nose was smashed in. For the purpose of preventing decomposition as much as possible, the body had been placed in a bath containing twenty-five gallons of rum. This was done on the second day, and even then decomposition had begun. The same evening of arrival (the fourth day since the murder) I made the post-mortem examination. The body, notwithstanding the spirits, was in a high state of decomposition outside; the internal organs being better preserved. The skin was blown out everywhere by gases of decomposition, rendering the features quite indistinguishable. Now the interesting part of the examination was, whether the appearances found warranted me in saying she had been ravished or not. A chemist living in the township had seen the body first, and swore that upon examination he found a fluid, resembling semen, on the body close to the entrance of the vagina, and that the hymen was ruptured. On account of the long maceration of the body in the spirits, of course all traces of such fluid were washed off; but I noticed the hymen lacerated, and signs of considerable bruising round about. I scraped the interior of the vagina, and placed some of the scrapings under the microscope, but could detect no spermatozoa. The decomposition and maceration had spoiled all chances of such being found. On examining the vagina from inside, it seemed as if it had been undisturbed, and so I was inclined to think that no complete penetration had taken place. However, the laceration of the hymen, the marks of bruises on the perineum and insides of the thighs, and the evidence of the qualified chemist, Mr. Purchase, as to seeing a fluid resembling semen on the person of the deceased, seemed to me to be sufficient evidence to show that the poor unfortunate girl had been ravished.

Then as to the cause of death. This was more evident. The cord found tied tightly round the neck had left a decided mark, and, in fact, had lacerated the skin in several places. Blood, too, was extravasated beneath the skin and tissues all round the neck, showing that considerable violence had been used during life. The brain was too highly putrefied to examine; but the skull was not fractured, though considerable masses of blood were found extravasated beneath the scalp. The lungs were both congested, but not deeply so. The cavities of the heart were found empty; but the blood was of a dark fluid nature, and perhaps this might account for the emptiness of the right side of the heart. The abdominal viscera, too, were somewhat congested.

Upon the absence of any positive signs of the cause of death, and from the negative signs just related, I gave it as my opinion that the deceased had come to her death by strangulation, caused by the rope having been tied tightly round her neck.

A man, named Nerman, was taken up on suspicion, and was tried at the Sessions Court, held at Dubbo on April 5th. He was found guilty of the murder, and has since confessed to the brutal deed. To-day he is to undergo the final penalty—forfeiture of his life.

Yours faithfully,

CHAS. E. BARNARD, M.D.,
Government Medical Officer, Surgeon to Gulgong Hospital, &c.

Gulgong, New South Wales, May 29th, 1877.

"A FIGURE OF SPEECH."

AT an inquest held a few days ago on the body of a Frenchwoman, aged seventy-four, who was alleged to have been "ill-treated in the insane ward of the St. Giles's and St. George's Infirmary, a nurse was charged with having come behind her (the deceased), and dealt her a heavy blow upon the head, and afterwards dragged her into the ward, slamming the door in the face of the witnesses (several inmates), and exclaiming that she would knock the two eyes of the deceased into one." In explanation, the nurse is stated to have deposed "that she might have said she would knock her two eyes into one, as that was *a figure of speech* she often used to the patients when they were troublesome." A more effective illustration of the method pursued by ordinary attendants in dealing with the insane could scarcely be adduced. In this instance the verdict declared that the patient came to her death by apoplexy, so that we have no desire to impute physical violence to the nurse; but enough is implied in her confession to show how miserably defective a system must be which permits the establishment of a reign of terror among the insane, such as this "figure of speech" implies. It is intolerable that "troublesome" patients should be scared to obedience by the menaces of ignorant and passionate attendants. It speaks ill of the progress made in what is pretentiously called "the non-restraint system" that lunatics are still coerced by fear of blows and bad usage, if not the infliction of force itself.

INCUBATION OF CANINE VIRUS FOR FIVE YEARS.

To the Editor of THE LANCET.

SIR,—The following case fulfils, you will admit, the indications of genuine hydrophobia, though occurring at a remote date from the receipt of injury. The details differ from the instances where the morbid influence of the patient's imagination simulates the real malady, and he recovers on the exposure of his delusion when the animal is proved non-rabid. Messrs. Bulsford and Young, with myself, watched the progress of this rare example.

An agricultural labourer, aged fifty-one, of good muscular build and average intelligence, received a slight bite on his finger in October, 1872, from his dog, which the same night gnawed through a door, and worried a litter of pigs (they, becoming mad, were killed, and privately conveyed to London!). The animal next attacked another dog, which, evidencing soon its inoculation, was shot. The owner of the first infected hung his dog, now believing it really mad, and had his finger cauterised. His health from that day was not deranged, except by headache, till Monday, June 25th of the present year, when he complained of general malaise and pain in the arm belonging to the bitten finger. He gave up labour on Tuesday, and next day sent to his surgeon. About ten o'clock A.M. on Wednesday the characteristic symptoms began to appear. I first saw him about one o'clock P.M. He sat quietly in bed, was not even restless, but very anxious, for he had acquired the dread of fluids in idea or contact. I witnessed the nervous seizing of the glass, horror at its approach, and convulsive effort to swallow. With the above history and such proofs of rabid poisoning, could there be error in diagnosis? The pain soon extended from the arm to the neck, the throat especially, epigastrium, and diaphragm. His respiration often became gasping, with præcordial oppression. From time to time nervous ere hism was excited by mere currents of air. Every hour he shuddered at the sight or sound or thought of liquids. An attempt to take medicine brought on the access of constriction of the throat. Deglutition was convulsive or denied to the sputum, and viscid or frothy saliva was ejected by jerky discharges. The tetanoid spasms continued to intensify; movements of the jaw were irregularly performed in hawking and spitting, and delirious laryngeal noises recurred ("biting and barking," so called). He threw himself on and off the bed, with loud, hoarse screams. There was not much perversion of mind; his talk was at times voluble, at others abrupt, even fierce. His frame became more irritable and sensitive, his mouth parched. He was aware he had lost the control, and warned his friends he might unwittingly bite them. His mental agitation, convulsive paroxysms, and sense of suffocation grew more severe every moment. Nervous exhaustion came on, and his last remission was the fatal termination. He never reached coma, but a degree of insensibility now and then. With staring, bloodshot eyes and incoherent words he died asphyxiated at nine P.M., being eleven hours after the seizure.

Can the origin of such a convulsive attack in the saliva of a rabid dog be disputed on the ground of the long period which elapsed from the infliction of the wound? The nervous centres are quickly poisoned by serpent venom. True, a few molecules of vaccine lymph implanted beneath the cuticle develop constitutional changes in a fixed period. But can the remote consequences of venereal contamination be pathologically explained? At such uncertain intervals is the zymosis complete. Yet how tardily must the fermentation have taken place in the hydrophobia case related in THE LANCET of June 30th, 1877, by Dr. Burnett, where the bare arm of a man was bitten on Feb. 22nd, and he lost his life, after four or five days' unmistakable attack of canine madness, on May 28th; or in another case cauterised recently at St. Thomas's Hospital, fatal three months after. There may not be much practical advantage from pathology determining where animal poison can nestle during five years. But on what grounds can its latency for such a period be controverted? Is there not an analogy between tuberculous exudation or cancerous infiltration arriving at the active stage of malignancy and the history of *materies morbi* in human rabies finally and fatally affecting the brain and spinal column? Why should the period of quiescence be limited without suspicion to months, and a doubt be thrown upon its prolongation for a few years? If any of your readers can throw light on the uncertain duration of time which animal poison introduced into the human body can take before the fatal crisis, a favour will be conferred on,

Yours faithfully,

Wigston-Magna, July, 1877. J. D. HULME, M.D., &c.

Mr. Edgar Atheling.—Cases of personal hardship or "grievance" will occur among cases receiving the assistance of a charity; but the rules and discipline of a charity must be maintained.

Dr. C. P. Harding.—Any trade carried on to the detriment of public health, physical or mental, must be a "nuisance."

THE CORONERSHIP OF THE COUNTY OF CARDIGAN.

THERE is likely to be a vacancy in the office of coroner for the Lower Division of the County of Cardigan by the resignation of John Phillips, Esq., Surgeon, late of Newcastle Emlyn. The present candidates are, Mr. Henry Harries Davies, of Rock House, Llandysul, Carmarthen; and a lawyer, Registrar of the County Court at Newcastle Emlyn. We trust that the electors will have no difficulty as between a medical and a legal candidate in preferring a medical one. In an inquiry into the cause of death, clearly a medical man has the advantage. We would especially urge upon the profession to use their great and just influence in favour of the election of a medical coroner. There has been of late so much inefficiency in the Coroner's Court when presided over by legal coroners as to have brought the institution into serious disrespect. For public reasons, therefore, we urge on the profession and the public to see that Mr. Phillips's successor is a medical man.

POISONING BY COLOURED SILK STOCKINGS.

To the Editor of THE LANCET.

SIR,—On July 11th I was requested to see a lady, who complained of severe itching of her feet, with great pain, which she compared to penknives darting into her feet and legs, and was unable to put the right foot on the ground. On examination I found the cuticle raised in several places on the soles and sides of the feet, accompanied by a fetid discharge of pus. Towards evening of the following day the temperature rose to 101°, and pulse to 120. She became very restless, sleeping little that night. Next morning the glands in both groins were as large as pigeons' eggs. In consultation with Dr. Paget, of Cambridge, and Dr. William Gill, of Russell-square, we discovered that magenta-coloured silk stockings had been worn about a week previously for four consecutive days. The inside of the shoes that were worn at the time were deeply coloured, and the dye was transferred to white silk stockings worn afterwards. In about a week's time our patient improved, but to this date occasionally complains of pain and itching. The stockings were purchased for one guinea a pair at one of the first houses in London. I forwarded them to Messrs. Son hall Brothers and Barclay, of Birmingham, for analysis, and received the following reply:—

"Birmingham, July 24th, 1877.

"DEAR SIR,—We have made a preliminary chemical examination of the colour used in dyeing the silk stockings received on the 18th inst., and are of opinion that it is coralline, an aniline compound, which has been stated on good authority to produce poisonous effects when in contact with the skin; its action being regarded by some as due to the dye itself, and by others to poisonous metals, as arsenic, lead, &c., associated with the colouring matter. We may add that we do not think it is used for dyeing purposes at the present time, other and harmless compounds having taken its place.

"To make an exhaustive analysis, we should require to remove the whole of the colouring matter, and as this would damage the stockings, we thought it advisable to write you.

"We are, dear Sir, yours faithfully,

"SOUTHALL BROTHERS AND BARCLAY."

I am, Sir, yours faithfully,

Waterbeach, Cambs, Aug. 1st, 1877. J. S. GREEN.

VENOMOUS SPIDERS.

THE men and animals employed in transporting stores to the Russian army are, according to the *Nitolaeff Vestnick*, suffering from the assaults of a species of field spider which infests in large numbers the littoral provinces of the Black Sea. The bite of these insects, it appears, produces first an annoying local irritation, and afterwards a tumefaction of the body, especially towards the abdominal region. Death rarely results. The effects of the bite continue for about three days. It is suggested that the rapid increase of these pests may be due to the destruction of forests, and consequently the lessening in the number of birds and insectivorous animals.

A Silly Farmer.—Certainly so.

Mr. F. B. Hannen.—The books named are all-sufficient for the purpose indicated; but some book on Botany must be read—Lindley's School Botany or some other elementary work.

THE MEDICAL DIRECTORY.

To the Editor of THE LANCET.

SIR,—In the correspondents' column of your journal of last week we are charged with omitting to send circulars to new residents, whose names are supplied to us by practitioners in the neighbourhood. Will you permit us to state that it is our rule, not only to send one circular, but, failing to get a return, to send a second.

We can imagine your correspondent to be an intending vendor of his practice, and that he finds his interest prejudiced by a statement in the Directory that there are more practitioners in his locality than is really the case. By means of the Local List the Directory renders important aid in the search of a new field of practice, or in the purchase of one. We regard this feature of our work as one of great utility, and we spare no pains to bring it to the highest point of usefulness. But it will be obvious that we are powerless to control the fact that, expectations having failed to be realised, some new comers depart before or shortly after the Directory is published. Your obedient servants,

THE EDITORS OF THE MEDICAL DIRECTORY.

Medical Directory Office, New Burlington-street,
August 7th, 1877.

*** This is no reply to the complaint made by our correspondent. We think that instead of printing the information received second-hand about newcomers to a locality, the compilers of a Directory should apply to the latter for personal statements. The practice of addressing circulars to known residents in a district has nothing to do with the omission to obtain direct corroborative information with regard to those of whom the publishers have heard only by report.—ED. L.

THE HOT-AIR BATH IN VETERINARY PRACTICE.

MR. THOMAS W. MAYER, F.R.C.V.S., Professor of Veterinary Surgery in the Cirencester Agricultural College, relates, in the *Veterinarian* for August, the case of a heifer affected with chronic diarrhœa which received great benefit by being placed repeatedly for three-quarters of an hour or an hour in an air-bath of the temperature of from 100° to 110° Fahr. This was conjoined with the usual medicinal treatment. The bath, Mr. Mayer states, produced immediate action on the skin and secretions, restoring the natural action of the stomach and intestines, as well as materially assisting the effect of the remedial agents employed.

UNCERTIFIED DEATHS.

To the Editor of THE LANCET.

SIR,—I send you the following illustrative case. Not a year passes without several such occurring in my district, and, doubtless, the same can be said by every practitioner in the kingdom.

A labourer, whom we may call John Oak, lately came to reside in the neighbourhood, and his wife was confined shortly after with her seventh child, two neighbours, married women, only being in attendance. The infant died about four hours after birth. The second day the father applied to the registrar, living three miles distant, for the usual certificate empowering the clergyman to bury. This was refused by the registrar, on the ground that he must first receive a certificate of the cause of death from a medical man or from the coroner. John Oak then applied to me, and, of course, I could not inform the registrar as to the cause of death, never having seen either mother or child. The man then went to the local police sergeant, who, after considerable hesitation and reluctance (on account of the censure he anticipated, and subsequently got, from his superintendent for reporting such a case) laid the particulars before the coroner, who, after hearing them, told the sergeant that, on the information as given, an inquest was unnecessary. The sergeant returned, and sent a verbal message to this effect by the man John Oak to the registrar, who still refused to register, on the ground that a verbal message conveyed no authority, and especially when brought by one who might be much interested in bringing it. John Oak then returned to the sergeant, who at first refused, but, after reflection and persuasion, was induced to commit to paper the fact that the coroner had heard the particulars, and did not deem an inquest needful; and then they buried the body.

It will be observed that there is nothing remarkable in the details of this case. On the contrary, it is unusually free from suspicious circumstances, and in all human probability the cause of the infant's death was congenital debility, or possibly it was the result of too prolonged labour. But, I would ask, suppose the infant had met its death by unfair means—and this we know is not quite an unheard-of thing,—would the steps taken, and they are the usual ones, have been at all likely to have detected the crime? In the case of persons long resident in the district, or supposed by the registrar to be above suspicion, it is, I believe, almost universally the practice of registrars to dispense with any authority, and, in such a case as I have quoted, to register the death as "from natural causes," uncertified; in these cases neither the coroner, the doctor, nor police have anything to do with the matter.

In your columns the necessity for legislation on the subject of judicial inquiry in cases of sudden, accidental, or uncertified death has been so persistently urged that it would be superfluous to say more. At the same time I would offer the following suggestion as a practicable, inexpensive, and fairly efficient way of dealing with these cases until the law on the subject is amended. It would certainly diminish the facilities that now exist for the safe commission of infanticide, and it would render the Registrar's returns somewhat more valuable. Let the surgeon holding the Poor-law medical appointment be also commissioned by "the powers that be" as coroner's assessor, or, as a medical friend most irreverently put it, coroner's jackal. Let his duty be to visit every case of uncertified death occurring in his district immediately on receiving information. He should strip the body, and examine it externally. He should interrogate those having evidence to give, and make any other inquiry he thought needful. He should then forward a brief report to the coroner, stating his opinion as to the probable cause of death, and the necessity or otherwise for a coroner's court to be held. If he deems an inquest unnecessary, he should also transmit to the registrar his authority to register the death, subject to the possibility of the coroner ordering an inquest, as caused by ——, so far as inquiry after death can ascertain. The registrar then can give the usual certificate to the clergyman. For this duty the coroner's assessor could not be overpaid by a fee of 10s. 6d. for each case and mileage. The county would be saved the expenses of jury, witnesses, &c.; the police would be spared much trouble; and the coroner and the public would have the satisfaction of knowing that a medical expert, and not a policeman of any grade, had made the primary inquiry in a matter where none but medical knowledge could detect the signs of violence, poison, or criminal neglect, or mark any discrepancy in the evidence of interested witnesses.

I had a long conversation a few days ago with a legal coroner on the subject of this letter, and he concurred in my opinion as to the need of a medical assessor, and, as to my suggestion, only demurred on the ground that some parish surgeons would hardly be fit men for the appointment. He expressed his wish that a medical assessor should sit with him at almost every inquest, and assist in the medical part of the inquiry.

Yours &c.,
DOUGLAS W. ESKELEY, M.D.

Stonehouse, Gloucestershire, July 27th, 1877.

TREATMENT OF SMALL-POX.

To the Editor of THE LANCET.

SIR,—In your journal of the 28th ult. I observe an "Account of the Small-pox Epidemic in Derby in 1876, with Treatment of the Cases," by Mr. Engledue Prideaux. The treatment described is not *original*, as if Mr. Prideaux will refer to THE LANCET of July 13th, 1872, he will there find an article on "Ectrotic Treatment of Small-pox and Scarlet Fever" by,

Your obedient servant,
ALEX. T. WATSON, M.D., &c.

Dresden, August 4th, 1877.

VOLUNTEER SURGEONS FOR THE WAR.

ALL applications respecting professional work at the seat of war should be made to the Secretary of the Stafford House Committee, Stafford House, St. James's; to Colonel Loyd Lindsay; or to the Honorary Secretary of the Sick and Wounded Russian Soldiers' Relief Fund, 14, Cockspur-street, Pall-mall, S.W.

A CORRESPONDENT would be glad of information as to the best work on "Chinese Therapeutics" in English or French.

Mr. Macdonald is thanked.

CHLORAL HYDRATE IN PUERPERAL CONVULSIONS.

To the Editor of THE LANCET.

SIR,—The following case appears to me sufficiently interesting to be worthy of being placed on record.

MRS. C—— was confined of her first child on Saturday morning, 24th June, 1876. I left her at 11 A.M., going on well. I was called in at 4 P.M. to see her, when I found her in violent epileptic convulsions. I at once bled her, applied ice to head, shaved hair off, turpentine stupes to feet, and blisters to back of neck. I gave her a draught, containing bromide of potassium, one drachm; chloral hydrate, fifteen grains; water to one ounce: to be taken every four hours. The fits continued during the night.

Sunday morning.—Fits still continuing.—2 P.M.: Still in convulsions; tongue severely bitten, highly congested, and protruded. I gave her a hypodermic injection of chloral hydrate (five minims of Corbyn's preparation of syrup of chloral hydrate) every hour. After the second injection she became quite composed, and the fits left her.—4 P.M.: Had one slight convulsion. I gave her another five-minim injection of syrup of chloral hydrate.—6 P.M.: Had no more convulsions; has been sleeping since 4 P.M.—12 P.M.: Still in sound sleep; applying ice to head still.

Monday.—6 A.M.: Quite composed; slept during the night.—Noon: Is awake, but quite unconscious.—6 P.M. Still unconscious. Had no more fits.—9 P.M.: Bowels well moved. Still unconscious. I examined her urine, and found it highly albuminous. I ordered her ten grains of bromide of potassium with one-twelfth of a grain of tartarised antimony every four hours; Brand's essence of beef, milk, and soda-water.

Tuesday.—10 A.M.: She is conscious; recognises her mother, but does not remember being confined; urine still loaded with albumen.—2 P.M.: Continuing beef-tea, milk, and soda-water. When spoken to, answers in monosyllables.

Wednesday.—0 A.M.: Slept soundly during the night; is quite sensible.—4 P.M.: Going on well; no return of convulsions, and continues to improve.

I am quite satisfied that the hypodermic injection of chloral hydrate was the means of saving this patient's life.

I remain, Sir, yours faithfully,
A. E. BOWER.

Prees, Shropshire, August 3rd, 1877.

Justitia.—We have carefully read the correspondence sent to us, including the account with items. The account, as a whole, is very reasonable, and should not have been the subject of complaint. We object to the system of charging for medicines, or appearing to do so. But when the separate visits in this attendance are considered, many of them made at very inconvenient hours, and some in the middle of the night; when it is remembered that the catheter was needed, and that there were two patients attended, it is obvious that, apart altogether from medicines supplied, the fees are almost too moderate. It is not only usual to charge extra for using a catheter, but most reasonable, seeing that it is one of the most important operations in surgery.

F. A. H.—Our correspondent is entitled to a guinea per day per case from the date of subpœna.

THE INFECTION OF SCARLET FEVER.

To the Editor of THE LANCET.

SIR,—A paragraph in Dr. Longhurst's otherwise admirable letter, published in your issue of the 28th ult., will, I believe, lead to serious consequences if acted upon with a questioning faith. He assumes that the scales of epidermis detached during the desquamation of scarlet fever are in every case non-infectious, because "attempts at inoculation of the disease by introducing scales of the epidermis under the skin of healthy persons have failed." Surely if we allow with him the chief media of communication to be the vaporous exhalations from the skin and breath, it follows that the epidermal covering removed by the desquamatory process is at all events as likely to be a nidus of infection as an overcoat "worn prior to the appearance of the disease." Although a particular scale of epidermis or a special square inch of cloth may prove incapable of conveying the infection to a healthy person, we shall certainly exceed the bounds of ordinary prudence if we permit a patient recovering from this disease to associate with his family during the period of desquamation.

Yours &c.,
W. AINSLIE HOLLIS.

Brighton, Aug. 6th, 1877.

"ABSTINENCE FROM ALCOHOL."

To the Editor of THE LANCET.

SIR,—Opinions are expressed in your valuable journal in a party way. Evidently some happen to find that total abstinence is best for them. By all means, let me say to them, keep to it. But there are those who perhaps go to the opposite extreme, and are bigoted in their views. What is good for one is not for another, and I am sure we all find this in everyday practice as regards diet generally and medical treatment. Every man or woman has his or her own organisation. Let us all be moderate in what we eat and drink, and find that which is good for us, and have the will at command to say "No" whenever tempted. Science and experience tell us we have to know ourselves. I find my pint and a half of ale agree with me. Teetotalism with my hard practice brought me down, and my nerve force at any operation was gone. A little at meal-time in the way of a stimulant does not, as a rule, do harm. Yet, however, those who feel the harm should abstain by all means. That is what I would say.

Your obedient servant,
P. H. W. T.

August, 1877.

WILL THEY LEARN WISDOM?

THE American Arctic Expedition, which is to set out in July, 1878, for the North Pole, will doubtless be conducted in the light of lessons taught by our somewhat discreditable failure. We venture to hope the scurvy and lime-juice episode will not be lost upon the promoters. It would be well to provide against possible "objections" by carrying the prophylactic in a concentrated form. The problem of condensing and preserving the juice seems to have been solved by the preparation to which we recently directed attention.

EXAMINATION AT THE COLLEGE OF SURGEONS.

To the Editor of THE LANCET.

SIR,—The authorities at the College, like those at Christ's Hospital, may bolster one another up as much as they please, and say that everything is perfectly right, and there is nothing wrong; but the public will not believe. There has been, and still exists, a wide-spread dissatisfaction on this subject. The saying is current, and I have heard more than one Professor assert, that the best men were plucked, and the second best passed—that is to say, the smart, ready men have a much better success than the slow and sound. But the question arises, Which will make the best practitioners?—and surely the object of examination is to provide the best, and to prevent the idle and ill-informed. The fact is, the mode and plan of examination adopted at the College is not the best to promote the end in view. It was only the other day a member of the Council said to me, "They (the examiners) were going to pluck the best man at ——, because he did not know the points of ossification of the bones of the carpus, which had he known," he added, "he would have forgotten to all practical purposes in a week." But that is not all. The examinations have not always been fair. I was told by a first-rate anatomist that he was asked the name of the hamstring muscles in one of two legs exposed to view, but covered at the upper part with a cloth. The legs had been cut off higher up, and transposed from left to right. Such tricks as this are quite unworthy of what the profession expects of the College.

Yours &c.,

August, 1877. M.R.C.S.E.

URINARY TEST CASES.

To the Editor of THE LANCET.

SIR,—With reference to Dr. Alexander's "Urinary Test Case," described by that gentleman in YOUR LANCET of March 20th, and alluded to by Dr. Geo. Johnson in your last number, I would suggest, as a safe and ready means of carrying the nitric acid, that it should be kept in a *glass-stoppered bottle covered with a ground-glass cap*, similar, though of course on a smaller scale, to those used for preserving chloroform, ether, &c. By this method the nitric-acid fumes could not escape, and it would be even more simple than that suggested by Dr. Johnson.

I am, Sir, yours obediently,

Princes-street, Storey's-gate, Aug. 7th, 1877. J. FERENCH BLAKE.

PAPER SPLINTS.

To the Editor of THE LANCET.

SIR,—In your last issue you describe Dr. Speare's treatment of injuries of joints &c. by paper splints. This method of treatment was taught me twenty-five years ago at the Richmond Hospital, Dublin, by the late Professor Smith and Mr. Hamilton while acting as their house-surgeon. I treated many cases under their direction, and I have constantly used it in general practice since, and can testify to its great value.

I remain, Sir, yours truly,

Leamington, August, 1877. JAMES THOMPSON, M.D.

COMMUNICATIONS not noticed in the current number shall receive attention in our issue of the ensuing week.

COMMUNICATIONS, LETTERS, &c., have been received from — Dr. Tuke; Dr. Dowse; Dr. Webb; Mr. Martin; Dr. Lee; Mr. O'Brien, Edinburgh; Mr. Scott, Manchester; Dr. O'Neill, Lincoln; Dr. Davies, Llandyssul; Dr. Perry; Mrs. Durnford, Waltham; Dr. Roe, Dublin; Dr. Denton, Steeple Claydon; Mr. Valentine, Bromley; Dr. Williams; Dr. Magill, Walkden; Mr. Atkinson; Mr. Jackson, Matlock; Mr. Macdonald, Manchester; Dr. Blake; Dr. Hannah, Ashton-in-Makerfield; Dr. Sanders; Dr. Whittaker, Glasgow; Dr. M'Bean, Newcastle-on-Tyne; Mr. Eastwood; M. E. Decroix, Paris; Mr. Ballhache, Baltimore, U.S.A.; Dr. Harding, Whittlesea; Dr. Watson, Dresden; Dr. Clark; Mr. Kirby, Edinburgh; Dr. Wilkinson; Mr. Green, Tisbury; Mr. Lyddon, Oldbury; Mr. T. Jones, Manchester; Dr. Robbs, Grantham; Dr. Hollis, Brighton; Dr. Woods, Southport; Dr. Cameron, Dublin; Mr. Mellodew; Mr. Wood, Holbeach; Mr. Griffith; Mr. Matthews; Dr. Browne; Mr. Cormick; Mr. Green, Mayfield; Dr. Benton, Highgate; Mr. Grubb, Waterbeach; Mr. Hannan, Knottingley; Dr. Carless, Devizes; The Director-General of the Army Medical Department; A Silly Farmer; J. A. H.; Nemo; W. B.; M. A.; The Sanitary Soap Company; The Registrar-General of Edinburgh; Z.; The Editors of the Medical Directory; J. C. A.; F. A. B.; B. B., Devon; P. M.; The Registrar-General of Births and Deaths; T. B. T.; &c. &c.

LETTERS, *each with enclosure*, are also acknowledged from — Mr. Pullen; Dr. Wilson, Kilmaurs; Dr. Wiseman, Orsett; Mr. Carmichael; Dr. Terry, Selston; Dr. M'Ewens, Cerne; Mr. Oldham; Mr. Field; Dr. Clouston, Hay; Dr. Bowers, Prees; Mr. Berry, Wisbeach; Mr. Yates, Tamworth; Dr. Macfarlane, Govan; Mr. Unsworth, Liverpool; Messrs. Bleeck and Leech, Bath; Mr. Nicholls, Hailsham; Medicus, Glasgow; M.D., Lynn; C., Luton; Gamma; W. B., Derby; M.D., Derby; M. T.; Housekeeper; Alpha, Southampton; E. P. S., Herts; Doctor, Bradford; H. G.; M.D. Bournemouth; Medical, Sevenoaks; B. L., Southwark; M. B., Chelsea; P. F.; Medicus, Suffolk; Galen; Chirurgus, Birmingham; Medicus, Caterham; J. S. C.; Medical Officer; Surgeon, Chichester; Student, Dundee; Medicus, Bradford; M. D. S.; Zampa; E. T. T., South Brent; G. S. L., Paddington; Alpha; Medicus.

Macclesfield Courier, Scarborough Express, Watertown Despatch, and *Retford News* have been received.

METEOROLOGICAL READINGS

(Taken daily at 8 a.m. by Steward's Instruments.)

THE LANCET OFFICE, AUG. 9TH, 1877.

Date.	Barometer reduced to Sea Level, and 32° F.	Direction of Wind.	Wet Bulb.	Dry Bulb	Solar Radia. in Vacuo	Max. Temp. Shade	Min. Temp.	Rainfall.	Remarks at 8.30 A.M.
Aug. 3	29·99	N.W.	52	59	103	70	40	...	Cloudy
,, 4	30·04	N.W.	55	59	106	71	53	0·06	Cloudy
,, 5	30·06	W.	60	71	115	79	56	...	Fine
,, 6	29·99	S.E.	64	70	103	77	59	...	Fine
,, 7	29·69	W.	63	69	99	71	63	0·05	Fine
,, 8	29·50	S.W.	60	63	106	70	56	0·18	Fine
,, 9	29·61	W.	59	63	...	...	58	0·39	Fine

Medical Diary for the ensuing Week.

Monday, Aug. 13.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M. each day, and at the same hour.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M. each day, and at the same hour.
ST. MARK'S HOSPITAL.—Operations, 9 A.M. and 2 P.M.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.

Tuesday, Aug. 14.

GUY'S HOSPITAL.—Operations, 1½ P.M., and on Friday at the same hour.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 3 P.M.

Wednesday, Aug. 15.

MIDDLESEX HOSPITAL.—Operations, 1 P.M.
ST. MARY'S HOSPITAL.—Operations, 1½ P.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.
ST. THOMAS'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.
KING'S COLLEGE HOSPITAL.—Operations, 2 P.M., and on Saturday at 1½ P.M.
GREAT NORTHERN HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M., and on Saturday at the same hour.
LONDON HOSPITAL.—Operations, 2 P.M.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2½ P.M.

Thursday, Aug. 16.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M.
ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 4 P.M.
CHARING-CROSS HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and on Friday at the same hour.

Friday, Aug. 17.

ST. GEORGE'S HOSPITAL.—Ophthalmic Operations, 1½ P.M.
ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

Saturday, Aug. 18.

ROYAL FREE HOSPITAL.—Operations, 2 P.M.

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